Buca di Beppo Ducati
Seattle

SoundEarth Strategies

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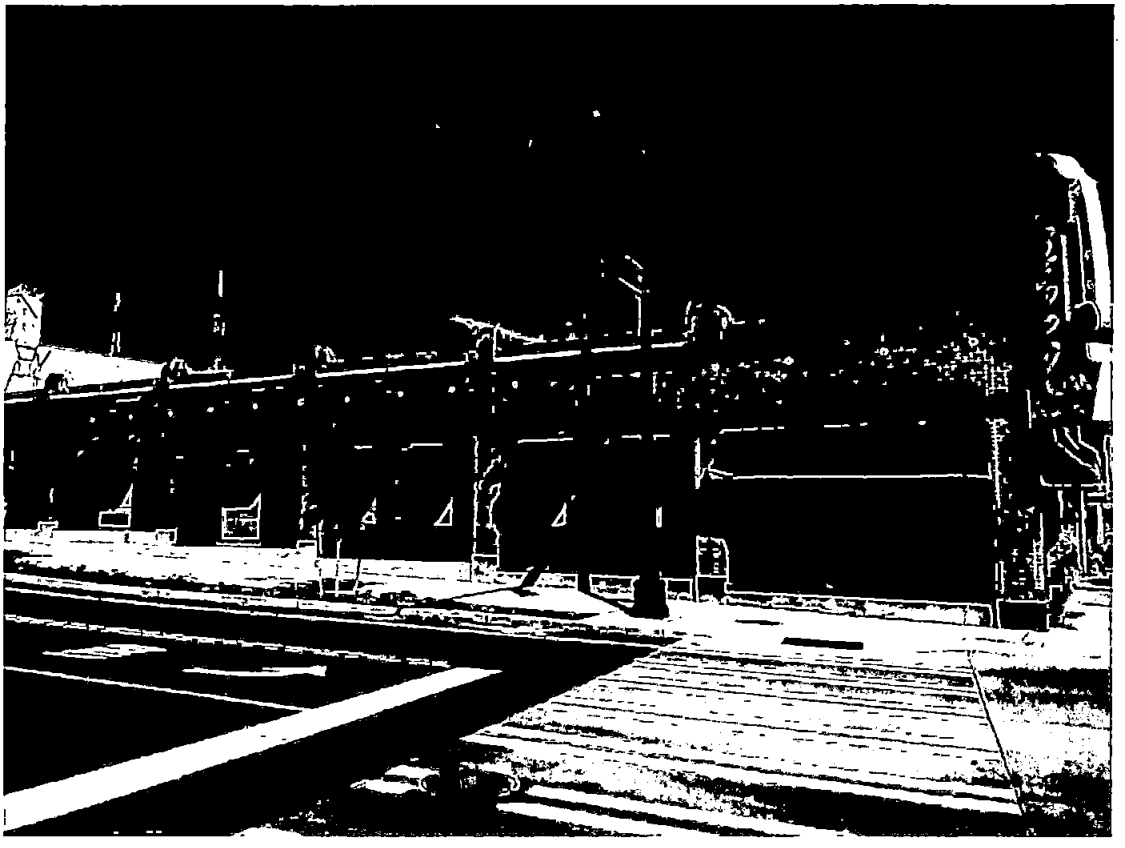
REMEDIAL INVESTIGATION AND CLEANUP ACTION PLAN

Buca di Beppo/Ducati Property



Property:
Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington

Prepared for:
W-T 701 Holdings VII, L.L.C.
c/o Talon
720 Olive Way, Suite 1020
Seattle, Washington

Report Date:
November 19, 2015

Remedial Investigation and Cleanup Action Plan

Prepared for:

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c/o Talon
720 Olive Way, Suite 1020
Seattle, Washington 98101

Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington 98109

Project No.: 1154-001-01

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November 19, 2015

SoundEarth Strategies

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ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
°F	degrees Fahrenheit
ARAR	relevant and appropriate requirement
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CFR	Code of Federal Regulations
cis-1,2-DCE	cis-1,2-dichloroethylene
COC	chemical of concern
CSM	conceptual site model
CUL	cleanup level
CVOC	chlorinated volatile organic carbon
DRPH	diesel-range petroleum hydrocarbons
Ecology	Washington State Department of Ecology
Enviros	Enviros Incorporated
EPA	U.S. Environmental Protection Agency
GAC	granular-activated carbon
GeoEngineers	GeoEngineers, Inc.
GRPH	gasoline-range petroleum hydrocarbons
Hart Crowser	Hart Crowser, Inc.
HASP	Site-Specific Health and Safety Plan
mg/kg	milligrams per kilogram
MTCA	Washington State Model Toxics Control Act
NAVD88	North American Vertical Datum of 1988
NFA	no further action

ACRONYMS AND ABBREVIATIONS (CONTINUED)

NWTPH	Northwest Total Petroleum Hydrocarbon
ORPH	oil-range petroleum hydrocarbons
OWS	oil/water separator
PCE	tetrachloroethylene
PCS	petroleum-contaminated soil
Phase 2	Phase 2 Final Report: Groundwater and subsurface Soil Investigation
Phase I ESA	Phase I Environmental Site Assessment Report
Phase II ESA	Phase II Environmental Site Assessment Report
the Property	Buca di Beppo/Ducati property located at 701 9th Avenue North in Seattle, Washington
QA/QC	quality assurance/quality control
RAO	remedial action objective
RCW	Revised Code of Washington
REC	recognized environmental condition
RI/CAP Report	Remedial Investigation and Cleanup Action Plan report
ROW	right-of-way
SAP	Sampling and Analysis Plan
Site	includes soil contaminated with GRPH, DRPH, ORPH, lead, and mercury beneath the Property
SoundEarth	SoundEarth Strategies, Inc.
TCE	trichloroethylene
TEE	Terrestrial Ecological Evaluation
TESC	temporary erosion and sediment control
TPH	total petroleum hydrocarbons
TSDF	treatment, storage, and disposal facility
UCL_{95}	the 95th percent upper confidence limit on the mean

ACRONYMS AND ABBREVIATIONS (CONTINUED)

USC	United States Code
UST	underground storage tank
VOC	volatile organic compound
WAC	Washington Administrative Code

1.0 INTRODUCTION

On behalf of W-T 701 Holdings VII, L.L.C., SoundEarth Strategies, Inc. (SoundEarth) has prepared this Remedial Investigation and Cleanup Action Plan report (RI/CAP Report) for the Buca di Beppo/Ducati property located at 701 9th Avenue North in Seattle, Washington (the Property). The general location of the Property is depicted on Figure 1. This RI/CAP Report was developed to meet the requirements of the Washington State Model Toxics Control Act (MTCA) regulation Parts 350 through 450 of Chapter 340 of Title 173 of the Washington Administrative Code (WAC 173-340-350 through 450). A feasibility study was not conducted because known petroleum-contaminated soil (PCS) within the Property boundary is to be removed as part of a proposed site redevelopment.

The Site is defined by the full lateral and vertical extent of contamination exceeding applicable cleanup levels (CULs) that has resulted from releases of petroleum hydrocarbons on the Property. Based on the information gathered to date, the Site includes soil contaminated with gasoline-, diesel-, and oil-range petroleum hydrocarbons (GRPH, DRPH, and ORPH, respectively), lead, and mercury beneath the Property. The approximate extent of contamination is shown in plan-view on Figure 2.

1.1 DOCUMENT PURPOSE AND OBJECTIVES

This RI/CAP Report has been prepared to summarize data necessary to adequately characterize the on-Property contamination in order to develop and evaluate cleanup action alternatives, to select the most appropriate cleanup action alternative based on future land use and in comparison with the Washington State Department of Ecology (Ecology) evaluation criteria listed below, and to satisfy the specific requirements of MTCA in accordance with WAC 173-340-380, 173-340-400, and 173-340-410.

According to MTCA, a selected cleanup action alternative must satisfy all of the following threshold criteria as specified in WAC 173-340-360(2):

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

While these threshold criteria represent the minimum standards for an acceptable cleanup action, WAC 173-340-360(2)(b) also recommends that the selected cleanup action satisfy the following additional criteria:

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

The objective of the remedial alternative is to obtain a written determination issued by Ecology that no further action (NFA) is necessary on the Property. This RI/CAP Report presents historical information regarding the source and extent of impacts beneath the Property, presents a conceptual site model

(CSM) to represent the extent of on-Property contamination and identified exposure receptors, and outlines the proposed plan to address the impacts that remain beneath the Property.

1.2 DOCUMENT ORGANIZATION

This RI/CAP Report is organized into the following sections:

- **Section 2.0, Background.** This section provides a description of the Site features and location; a summary of the current and historical uses of the Site and adjoining properties; and a description of the environmental setting of the Site, including the local meteorology, geology, and hydrology.
- **Section 3.0, Completed Investigations.** This section provides a description of the investigations conducted at the Site by SoundEarth and others since 1988. Included are an outline of the field work performed, a discussion of the findings, and identification of remaining data gaps following completion of each phase of the investigation. Also included are summaries of investigations on the adjacent Maaco property and Roy Street Shops site and the nearby American Linen Supply Co. property.
- **Section 4.0, Conceptual Site Model.** This section provides a summary of the CSM derived primarily from the results of the historical research and the cumulative investigations performed at the Site. Included is a discussion of the confirmed and suspected source areas, the chemicals of concern (COCs), the media of concern, the fate and transport characteristics of the release of hazardous substances, the nature and extent of contamination at the Site, the potential exposure pathways, and the Terrestrial Ecological Evaluation (TEE).
- **Section 5.0, Technical Elements.** The section summarizes technical elements of the remedial analysis, including the remedial action objectives (RAOs), applicable or relevant and appropriate requirements (ARARs), COCs, media of concern, and cleanup standards.
- **Section 6.0, Selected Cleanup Action Plan.** This section provides an evaluation of the feasible cleanup alternatives, a description of the selected cleanup action, and defines the objectives of the proposed cleanup action.
- **Section 7.0, Cleanup Action Implementation Plan.** This section describes the components of the cleanup action for the Property, including the cleanup action implementation documents and associated construction activities.
- **Section 8.0, Compliance Monitoring.** This section describes the protection, performance, and confirmational monitoring that will be conducted as part of the cleanup action.
- **Section 9.0, Documentation Requirements.** This section describes the documentation to be provided as part of the cleanup action and includes a discussion of document management, waste disposal tracking information, and compliance reporting.
- **Section 10.0, Limitations.** This section discusses limitations imposed on use of the information in this document.
- **Section 11.0, References.** This section lists the references used to prepare this document.

2.0 BACKGROUND

This section provides a description of the features and locations of the Property and surrounding parcels; a summary of historical Site use; and a description of the local geology, hydrology, and land use pertaining to the Site. Historical documentation referenced in this section is provided in Appendix A.

2.1 SITE DESCRIPTION

The Site is defined by the extent of contamination caused by the releases of hazardous substances at the Property, as described above in Section 1.0.

The Property consists of two contiguous, rectangular-shaped tax parcels (King County Parcel Nos. 408880-3435 and 408880-3440) that cover a total of approximately 29,396 square feet (0.67 acres) of land in Township 25 North/Range 4 East/Section 30. The Property is located at 701 9th Avenue North, approximately 0.4 miles north of downtown Seattle, Washington (Figure 1). The Property is currently occupied by a 1922-vintage, single-story building that encloses approximately 29,250 square feet of space. The masonry structure has a flat roof and is heated by an electric/natural gas HVAC system.

2.2 SURROUNDING PARCEL DESCRIPTIONS

This section describes the current use and ownership of each of the parcels adjoining to and surrounding the Site.

2.2.1 North

A single-story commercial building presently used by Maaco Automotive Collision Repair and Painting Company (Maaco) and an asphalt-paved parking lot are located on the north-adjoining property.

2.2.2 East

Adjacent to the east is 9th Avenue North. Three commercial buildings are situated beyond to the east and are currently occupied by (from north to south): World Sports Grille, TAP Plastics, and Urban City Coffee.

2.2.3 South

Adjacent to the south is Roy Street. A large cleared and graded area with soil stockpiled for construction purposes is located farther to the south.

2.2.4 West

A large office-warehouse building currently owned by Seattle City Light is located adjacent to the west beyond an alley.

2.3 CURRENT PROPERTY ZONING AND USE

According to the Seattle Municipal Code Zoning Map, the Property is zoned SM-85, which is for mixed use purposes. The current tenants of the building are the Buca di Beppo Italian restaurant (southern tenant space) and Ducati motorcycle sales and service (northern tenant space). The northernmost portion of the building is currently used as a parking garage.

2.4 LAND USE HISTORY OF THE PROPERTY

It appears that the Property was historically inundated by Lake Union and was artificially filled sometime between 1908 and 1912. The Property was initially developed in 1922 with the existing commercial building and was in use as an automotive/truck repair shop by the 1920s until at least 1969. The existing northern tenant space has continued to be used for parking and vehicle repair activities since 1969. The truck and vehicle repair facilities included the historical use of sumps, a potential greasing pit, hydraulic hoists, and a waste oil/heating oil underground storage tank (UST). A portion of the building was in use as an automotive dealership by 1989. Buca di Beppo restaurant began operating in the southern tenant space in 1995.

2.5 HISTORICAL LAND USE OF SURROUNDING PARCELS

This section presents a summary of the historical land use on parcels adjoining and surrounding the Site.

2.5.1 North-Adjacent Property

The north-adjoining property was historically inundated by Lake Union until the area was artificially filled in during the early 1900s. An existing commercial building (739 9th Avenue North) was constructed in 1924 and was initially heated by a stove. An addition was made to this structure in 1948. The building was used by Truck Welding Co./Truckweld Utilities Inc. by 1949 until the early 1980s. City of Seattle Department of Planning and Development records indicate the structure was used as a body vehicle building shop in 1955. The structure was vacant in 1986. Maaco began operating on this property in 1996.

2.5.2 East-Adjacent Properties

The east-adjoining properties, including 9th Avenue North, were historically located in Lake Union until the area was artificially filled in during the early 1900s.

A laundry facility operated on the property currently located at 900 Roy Street in 1917. By the 1930s it was replaced with a gasoline service station and an automotive repair shop. The existing commercial building at 900 Roy Street was constructed in 1941 and was in use as a machine shop by 1950 and an automotive service shop by 1969.

A commercial building (707 Westlake Avenue North) was constructed in 1914 and was heated by an oil burner unit. A 1,200 gallon storage tank was listed as associated with this structure. This building was occupied by a lithograph manufacturer by 1917 and later by a sheet metal fabrication facility.

Between 1990 and 2011 the existing buildings were remodeled and changed in use from industrial to food service, retail, and residential.

2.5.3 South-Adjacent Properties

The south-adjoining property was developed with small residences by 1893 and two cabins were in place at the current location of the Roy Street right-of-way (ROW). The cabins were removed by 1905. The area south of the current location of Roy Street was developed with at least one commercial building by 1910 and additional commercial buildings by 1924. An auto wrecking facility operated in the 1910-vintage building in 1937 and this structure was torn down by 1956. The area south of Roy Street was mostly redeveloped between 1950 and 1966 with Broad Street trending from southwest to northeast and connecting to Roy Street at the junction with 9th

Avenue North. Broad Street and the remaining nearby area to the south of Roy Street have been removed since 2011.

2.5.4 West-Adjacent Property

The west-adjoining property was occupied by the shoreline of Lake Union until the area was artificially filled in the early 1900s. A small dwelling was located on the southern portion of this property by 1905, prior to being removed during filling activities. An existing commercial building, historically used as a public utilities warehouse, was added to this property in 1926. The building was used for workshops, storage, and offices by 1950 for Puget Sound Power and Light Co. A garage located in the northern portion of the building basement was used to repair, refuel, and wash vehicles. Transformer testing was also performed in the basement.

A fueling facility was constructed proximal to the northern side of the warehouse building on this property in approximately 1956. Archived assessor records indicate this facility was equipped with 4,000-gallon tanks and an oil warehouse. The fueling canopy associated with this facility was removed by 1990.

2.5.5 Surrounding Properties

Surrounding properties to the west and southwest were primarily residential in use by the 1890s. The immediate Property vicinity became developed with commercial and light industrial uses following the artificial filling of the southern end of Lake Union in the early 1900s.

A portion of a nearby hydrologically upgradient property to the west (the American Linen Supply Co. site located at 700 Dexter Avenue North) was developed with a refueling facility in 1930, which was demolished in 1966. An automotive repair facility was added to this property in 1947. Building plans indicate that dry cleaning was conducted on this property as early as 1966. According to reports by others, dry cleaning machines operated on the property in 1978. The dry cleaning machines were no longer present on this property by 1990.

2.6 ENVIRONMENTAL SETTING

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

2.6.1 Meteorology

Climate in the Seattle area is generally mild and experiences moderate seasonal fluctuations in temperature. Average temperatures range from the 60s in the summer to the 40s in the winter. The warmest month of the year is August, which has an average maximum temperature of 74.90 degrees Fahrenheit (°F), while the coldest month of the year is January, which has an average minimum temperature of 36.00 °F. The annual average rainfall in the Seattle area is 38.25 inches, with December as the wettest month of the year when the area receives an average rainfall total of 6.06 inches (IDcide 2015).

2.6.2 Topography

The Property and vicinity lie within the Puget Trough or Lowland portion of the Pacific Border Physiographic Province. The Puget Lowland is a broad, low-lying region situated between the Cascade Range to the east and the Olympic Mountains and Willapa Hills to the west. In the north, the San Juan Islands form the division between the Puget Lowland and the Strait of Georgia in British Columbia. The province is characterized by roughly north–south-oriented valleys and ridges, with the ridges that locally form an upland plain at elevations up to 500 feet

above sea level. The moderately to steeply sloped ridges are separated by swales, which are often occupied by wetlands, streams, and lakes. The physiographic nature of the Puget Lowland was prominently formed by the last retreat of the Vashon Stade of the Fraser Glaciation, which is estimated to have occurred between 14,000 and 18,000 years before present (Waitt Jr. and Thorson 1983).

The Property is generally flat with an elevation of approximately 31 feet above mean sea level (North American Vertical Datum of 1988 [NAVD88]). The USGS Topographic Map of the Seattle North, Washington Quadrangle, published in 1983, depicts the topography in the vicinity of the Property as sloping downward to the northeast. The topographic map depicts the closest surface water body as Lake Union, which is located approximately 500 feet to the northeast.

2.6.3 Groundwater Use

According to the Ecology Water Well Logs database (Ecology 2015), no water supply wells are present within approximately 1.25 miles of the Property.

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

2.7 GEOLOGIC AND HYDROGEOLOGIC SETTING

This section provides a summary of the geologic and hydrogeologic setting of the Site.

2.7.1 Regional Geology and Hydrogeology

According to *The Geologic Map of Seattle—A Progress Report* (Troost et al. 2005), the predominant surficial geology in the Property vicinity consists of deposits corresponding to the Vashon Stade of the Fraser Glaciation and pre-Fraser glacial and interglacial periods.

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

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

The Vashon recessional outwash deposits are generally discontinuous in the Property vicinity, and consist of loose to very dense, layered sands and gravels, which are generally well-sorted (poorly graded). Layers of silty sands and silts are less common. The Vashon recessional lacustrine deposits consist of layered silts and clays, which range in plasticity from low to high,

and may contain localized intervals of sand or peat. The recessional lacustrine deposits may grade into recessional outwash deposits (Troost et al. 2005).

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

2.7.2 Site Geology

The Geologic Map of Seattle—A Progress Report indicates that the Property is underlain by Quaternary age Lake Deposits. These deposits consist of silt and clay with local sand layers, peat, and other organic sediments.

Previous borings completed on the Property and in its immediate vicinity were advanced to approximate depths of between 5 to 25 feet below ground surface (bgs). Soils encountered during boring activities consisted of anthropogenic fill material to a depth of approximately 12 feet bgs across the Site. Fill material generally consisted of silty sand with localized zones of sandy silt, gravel, and crushed concrete. Glass and metal debris was encountered throughout the fill material. These soils were underlain by damp to moist silty sand varying to sandy silt with local sand-rich interbeds that extended to the full depth explored. These underlying deposits are interpreted to be native lacustrine and slack water deposits. The locations of the borings and wells advanced during explorations at the Site are shown in Figure 2. Cross sections A–A' and B–B', depicting subsurface soil characteristics and geologic units encountered in the explorations are presented in Figures 3, 4, and 5. Detailed boring logs are included as Appendix B.

2.7.3 Site Hydrology

Based solely upon inference from local topography, drainage patterns, and surface water flow, it appears that shallow-seated groundwater in the vicinity of the Property flows in a generally easterly direction.

SoundEarth's collection of groundwater data from monitoring wells surrounding the Property and nearby areas to the north, west, and south in January 2014 indicated a general groundwater flow direction toward the east in the immediate vicinity of the Property (SoundEarth 2014).

Depth to groundwater in monitoring wells immediately proximal to the Property in the west-adjoining alley and in the east-adjoining 9th Avenue North ROW, measured by SoundEarth as part of a groundwater monitoring event on June 16, 2015, ranged from approximately 15 feet to 23 feet bgs, or elevations of approximately 16 to 17 feet above sea level.

3.0 COMPLETED INVESTIGATIONS

This section summarizes the results of investigations conducted at the Property as well as the north-adjacent property and hydrologically upgradient properties to the west (Maaco, Roy Street Shops site, and American Linen Supply Co. site). The locations of soil borings, groundwater monitoring wells, and other Property features are shown on Figures 2 and 3. The soil and groundwater analytical results are shown on Figures 3, 4, and 5 and in Tables 1 and 2. Available laboratory analytical reports are attached in Appendix C.

3.1 HART CROWSER, INC. PRELIMINARY ENVIRONMENTAL ASSESSMENT—DECEMBER 30, 1988

Hart Crowser, Inc. (Hart Crowser) completed a preliminary environmental assessment of the Property that included advancing six soil borings (B-1 through B-6) between December 7 and 10, 1988. A copy of this report is included in Appendix D. Four borings (B-1 through B-4) were advanced inside the existing building on the Property by hand auger to depths ranging from 7.5 to 10 feet bgs. Two borings (B-5 and B-6) were advanced in the 9th Avenue North ROW with a truck-mounted hollow-stem auger to depths ranging from 14 to 16.5 feet bgs. Select soil samples were submitted for analysis of total petroleum hydrocarbons (TPH) by U.S. Environmental Protection Agency (EPA) Method 418.1.

Soil boring B-6, which was advanced outside the northeastern corner of the building in the east-adjoining 9th Avenue North sidewalk, was developed as a monitoring well following advancement. Groundwater was encountered at approximately 14 feet bgs during boring activities. The well was installed with a screened interval of 10 to 15 feet bgs. Hart Crowser collected a sample of groundwater from the monitoring well on December 13, 1988, and submitted it for analysis of TPH and benzene, toluene, ethylbenzene, and total xylenes (BTEX).

3.1.1 Soil Results

TPH concentrations in soil samples collected from four borings (B-1 through B-4) at unlisted depths ranged from 50 milligrams per kilogram (mg/kg) to 1,200 mg/kg. TPH concentrations in soil samples collected from unlisted depths in borings B-5 and B-6 were below the laboratory reporting limit. The current MTCA Method A CUL is 2,000 mg/kg for ORPH in soil.

An Extraction Procedure Toxicity analysis for metals was performed on a soil sample collected from boring B-6. Concentrations of metals analyzed for were reportedly below their respective laboratory reporting limits and/or applicable CULs.

3.1.2 Groundwater Results

Laboratory analysis of the groundwater sample collected from well B-6 revealed no detectable concentrations of TPH or BTEX above the respective laboratory reporting limits.

3.1.3 Data Gaps

No contamination in excess of applicable CULs was encountered during the Hart Crowser investigation. Thus, no recognizable gaps exist in the current site assessment.

3.2 ENVIROS INCORPORATED PHASE 2 FINAL REPORT—DECEMBER 22, 1992

Contamination at the Property was first discovered during a subsurface investigation conducted by Enviros Incorporated (Enviros). A copy of this report is included in Appendix D. Enviros completed a Phase 2 Final Report: Groundwater and Subsurface Soil Investigation (Phase 2) for the Property in 1992.

The Phase 2 included the advancement of seven soil borings inside the building on the Property. The borings included the following:

- Five hand auger borings (BH1 through BH5) to depths ranging from 5 to 9 feet bgs. BH1 was advanced in the vicinity of a former catch basin, downgradient from the former pit location; BH2 was advanced adjacent to the former hoist locations in the center of the garage; BH3 and BH4 were advanced in the central-western portion of the building proximal to the former boiler room and waste oil/heating oil UST; and BH5 was advanced in the northwest corner of the building adjacent to the oil/water separator (OWS).
- One hollow-stem auger soil boring advanced to a depth of 21.5 feet bgs and completed as a groundwater monitoring well (MW1). MW1 was located in the northwest corner of the building, downgradient from the OWS.
- One hollow-stem auger soil boring (SB1) advanced to 6.5 feet bgs. SB1 was advanced in the central-western portion of the building, downgradient from the UST.

Select soil samples were submitted for analysis of one or more of the following: GRPH by Method WTPH-Gas, BTEX by Method WTPH-BTEX, DRPH, and ORPH by Method WTPH-418.1, and volatile organic compounds (VOCs) by EPA Method 8010.

Groundwater was reportedly encountered at 14 feet bgs in boring MW1. Enviros sampled groundwater monitoring well B-6 in August 1992 and submitted the sample for analysis of TPH by Method WTPH-418.1. Groundwater samples were collected from monitoring wells MW1 and B-6 by Enviros in November 1992 and submitted for analysis of one or more of the following: TPH by Method WTPH-418.1, DRPH by Method WTPH-D, and VOCs by EPA Method 8010.

3.2.1 Soil Results

A TPH concentration of 5,800 mg/kg was reported in the sample collected at 9 feet bgs from boring BH3. A soil sample from boring BH5 at approximately 8.5 feet bgs had a reported GRPH concentration of 230 mg/kg. Laboratory analysis of a soil sample collected at a depth of approximately 10 to 11.5 feet bgs in boring MW1 revealed a DRPH concentration of 4,000 mg/kg.

A low-level detection of methylene chloride, 1.1 mg/kg, by EPA Method 8010 was reported in the soil sample collected from 10 to 11.5 feet bgs in boring MW1; however, the result was flagged by the laboratory because methylene chloride was also detected in the associated method blank. The presence of methylene chloride in the method blank indicates that the reported detection in the soil sample from boring MW1 is likely the result of a laboratory contaminant and not from the Property.

All other soil concentrations were below their current MTCA Method A CULs and/or laboratory reporting limits.

3.2.2 Groundwater Results

The TPH concentration for the groundwater sample collected from monitoring well B-6 in August 1992 was reportedly below the method detection limit of 500 micrograms per liter (µg/L).

A DRPH concentration of 810 µg/L was reported in the groundwater sample collected from monitoring well MW1 in November 1992. A TPH concentration of 920 µg/L was reported in the groundwater sample collected from off-Property well B-6 in November 1992. These concentrations fall below the former (1992) MTCA Method A CUL of 1,000 µg/L but above the current MTCA Method A CUL of 500 µg/L for both DRPH and ORPH.

3.2.3 Data Gaps

The lateral and vertical extent of PCS proximal to a heating oil/waste oil UST in the western portion of the building and proximal to the former waste oil sump in the northwestern portion of the building remained undefined following the 1992 Enviros environmental work. The source and distribution of petroleum contamination in groundwater under the Property also remained undefined.

3.3 SOUNDEARTH PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT—SEPTEMBER 19, 2014

SoundEarth completed a Phase I Environmental Site Assessment Report (Phase I ESA) in 2014. The Phase I ESA identified the following general potential issues to consider for redevelopment activities on the Property:

- **Confirmed environmental impacts to soil and groundwater beneath the Property by petroleum hydrocarbons related to historical truck and vehicle maintenance and repair activities on the Property.** Truck and vehicle maintenance and repair activities began on the Property in the 1920s and included the use of sumps, at least one heating oil/waste oil UST, a potential greasing pit, hydraulic hoists, and a potential paint spray booth. Petroleum hydrocarbon-impacted soil exceeding MTCA Method A cleanup levels was documented by others in 1988 and 1992 in the area of the hydraulic lift system in the western portion of the building, proximal to a heating oil/waste oil UST in the western portion of the building, and proximal to the former waste oil sump in the northwestern portion of the building on the Property.
- **Presence of a second abandoned UST, along with a floor drain and numerous cracks in the floor of the existing service shop area in the building.** A 2-inch-diameter capped pipe was observed in the building near the southeastern corner of the parking garage. This pipe was a fill port for an UST that appears to have been filled with concrete. In addition, a floor drain with an unknown point of discharge was observed in the existing motorcycle service shop in the building, along with several cracks in the shop floor. According to the current tenant, the floor drain was installed prior to their occupancy of the building and previous uses of the floor drain are not known.
- **Presence of fill material of unknown origin beneath the Property.** The presence of uncontrolled fill beneath the Property is considered a recognized environmental condition (REC).
- **Presence of a plume of chlorinated solvent-contaminated groundwater extending beneath the west edge of the Property, originating from the nearby hydrologically upgradient Property at 700 Dexter Avenue North, two blocks to the west, known as the American Linen Company/700 Dexter Avenue North site.** Publicly available findings of previous investigations performed at the American Linen Supply Co./700 Dexter Avenue North site, indicate that soil, soil vapor, and groundwater are contaminated with one or more of the following: GRPH, DRPH, ORPH, tetrachloroethylene (PCE), trichloroethylene (TCE), vinyl chloride, and cis-1,2-dichloroethylene (cis-1,2-DCE) beneath that property and portions of the south- and east-

adjoining properties. Contamination extends beneath the 8th, 9th, and Westlake Avenues North and Valley, Roy, and Broad Streets ROWs, including the Property. Attached Figure 3 shows the approximate extent of the PCE plume on the Property in 2013. Ecology data records indicate that the lateral distribution of petroleum contamination in soil and groundwater associated with this site is bound to the east by monitoring well MW121 (in the 8th Avenue North ROW) approximately 140 feet to the west of the Property. The PCE in groundwater extends from the 700 Dexter Avenue North property downgradient and beneath the southern portion (approximately 15 percent) of the Property, at a depth of about 30 feet below the existing Property elevation. The presence of several existing groundwater monitoring wells in ROWs adjacent to the west and east of the Property are primarily related to the 700 Dexter Avenue North site. Interim remedial activities have been initiated to treat the source area of the plume. However, chlorinated solvent-impacted groundwater at concentrations exceeding the MTCA Method A cleanup level for PCE currently remains downgradient of the 700 Dexter Avenue North property, extending to the west edge of the Property at 9th Avenue North. The plume of chlorinated solvent-contaminated groundwater remaining beneath the Property is considered to represent a REC. However, we understand that the conceptual Property redevelopment will include a waterproof foundation system, which will address the concerns with the PCE plume edge.

- **Potential risk for impacts to the Property related to a past release of petroleum products at a former fueling facility adjacent to the northwest of the Property beyond an alley (Ecology-listed Roy Street Shops site).** PCS exceeding MTCA Method A cleanup levels remained at the Roy Street Shops site at the north and east limits of the final excavation and at the base of the excavation (at approximately 20 to 25 feet bgs) following UST removal activities by others during the 1990s. RETEC advised in their Revised Site Characterization Report that "the volume of soil exceeding clean-up levels is difficult to predict based on existing data" (RETEC 1995). RETEC further advised that "the source of groundwater contamination at the site originated from fuel handling practices and the storage of fuels in leaky USTs. Contaminated soil not removed during the previous excavations serves as a continuing source of contamination to groundwater" (RETEC 1995). Considering the inferred hydrologically up- to crossgradient hydrologic position of the Roy Street Shops site and close proximity (less than approximately 50 feet) to the Property, and that the full lateral extent of soil and groundwater impacts has not been defined, this nearby site is considered a REC with a moderate to high risk for environmental impacts to the Property.

3.4 SOUNDEARTH SUBSURFACE INVESTIGATION REPORT—OCTOBER 7, 2014

On September 5, 2014, SoundEarth completed a subsurface investigation. Seven soil borings (P01 through P07) were advanced on the Property using a direct-push drill rig. Borings P01 through P04, P06, and P07 were advanced to approximately 25 feet bgs; boring P05 was advanced at an angle approximately 30 degrees from vertical to a straight-line depth of approximately 25 feet.

Select soil samples were submitted for analysis of one or more of the following: GRPH by Northwest Total Petroleum Hydrocarbon (NWTPH) Method NWTPH-Gx, DRPH, and ORPH by Method NWTPH-Dx, BTEX by EPA Method 8021B, chlorinated volatile organic carbons (CVOCs) and BTEX by EPA Method 8260C, MTCA 5 Metals by EPA Methods 200.8 and 1631E, and petroleum hydrocarbon identification by Method NWTPH-HCID.

3.4.1 Soil Results

Concentrations of ORPH and lead above their respective CULs were detected in a soil sample collected from boring PB01 at approximately 10 feet bgs. A concentration of DRPH in excess of the applicable CUL was detected in the soil sample collected from boring PB02 at approximately 15 feet bgs. A sample from boring PB07 collected at approximately 10 feet bgs exhibited elevated concentrations of lead and mercury that were in excess of respective CULs. All other soil concentrations were below either the applicable CULs or the laboratory reporting limits.

3.4.2 Data Gaps

Petroleum impacts to soil beneath the Property appear limited to the upper 20 feet bgs. Impacts under the central-western portion of the Property in the vicinity of the boiler room and waste oil UST have not been clearly defined. The lateral extent of subsurface impacts in the northwest corner of the Property has not been fully defined. In addition, the source and extent of near-surface groundwater petroleum hydrocarbon contamination has not been fully defined.

3.5 MAACO COLLISION REPAIR AND PAINTING SUMMARY

The Maaco property is located directly north of the Property. GeoEngineers, Inc. (GeoEngineers) completed a Phase I ESA of the property (also known as the South Lake Union Marriott AC property) on November 13, 2014, and identified multiple RECs in connection with former property use (GeoEngineers 2014a). These included the following: historical automobile assembly, repair, and painting conducted at the property; historical storage and use of "significant" quantities of paints and automotive fluids; the presence of a heating oil UST that was closed-in-place; and the presence of debris-laden anthropogenic fill material beneath the Maaco property.

GeoEngineers completed a Phase II Environmental Site Assessment (Phase II ESA) on the Maaco property in August and September of 2014 (GeoEngineers 2014b). The Phase II ESA included advancement of 16 soil borings on the property, observation of soil and collection and analysis of soil samples from the borings, completion of 3 soil borings as monitoring wells, collection and analysis of groundwater samples from the monitoring wells, and collection and analysis of 6 sub-slab soil vapor samples from the property. Analytical results of the GeoEngineers' Phase II ESA indicated contaminated soil, groundwater, and soil vapor were present beneath the Maaco property, specifically the following:

- Soil containing concentrations of GRPH, DRPH, ORPH, benzene, ethylbenzene, naphthalene, benzo(a)pyrene, cadmium, lead, and mercury in excess of applicable MTCA Method A CULs.
- A "significant amount of decaying trash and debris" was observed between approximately 5 and 15 feet bgs.
- Groundwater containing concentrations of benzene, vinyl chloride, and arsenic in excess of applicable MTCA Method A CULs.
- Groundwater containing detectable concentrations of GRPH, ethylbenzene, total xylenes, cis-1,2-DCE, 1,2-dichloroethane, barium, cadmium, chromium, lead, selenium, and silver below the applicable CULs.
- Soil vapor containing concentrations of TPH, benzene, and multiple VOCs in excess of the applicable MTCA Method A CULs.

The full source(s) and extent(s) of observed subsurface impact were not defined by the GeoEngineers Phase II ESA. However, DRPH- and ORPH-contaminated soil was associated with an OWS located on the western portion of the Maaco property. In addition, GeoEngineers attributed benzene-contaminated groundwater beneath the property to the hydraulically upgradient Roy Street Shops site (summarized in Section 3.6 of this RI/CAP Report).

3.6 ROY STREET SHOPS SUMMARY

The Roy Street Shops site at 802 Roy Street is generally located approximately 50 to 100 feet west to northwest of the Property in an upgradient to crossgradient hydrologic position. Between 1944 and 1955, at least two generations of fuel dispensers and associated USTs were installed on the northern portion of this property. Ecology records indicate the historical operation of the former UST systems on this property resulted in impacts to the subsurface with soil and groundwater petroleum contamination exceeding established CULs.

Reportedly, a 2,700-gallon and a 550-gallon tank were removed from proximal to the north side of the warehouse building on this property in 1992. Approximately 325 tons of PCS was excavated and removed from this site for treatment by thermal desorption during UST decommissioning activities. Elevated concentrations of GRPH remained in soil following initial excavation activities. Seven soil borings were advanced in March 1993 proximal to the UST excavation with five of the borings completed as monitoring wells. Concentrations of GRPH and/or BTEX compounds exceeded their MTCA Method A CULs in groundwater samples collected from the five monitoring wells in March 1993. In September and October 1993, an additional approximately 2,870 tons of PCS was excavated from this site, with the first 2,290 tons recycled into cement at Holnam, Inc. in Seattle, Washington, and the remaining soil transported for disposal at the Roosevelt landfill by Rabanco. The five previously installed wells were abandoned in an effort to eliminate the conduit between the lower and upper portions of the aquifer, and five new monitoring wells (MW-6 through MW-10) were installed by RETEC in October 1993. Concentrations of GRPH and/or BTEX compounds exceeded MTCA Method A cleanup levels in groundwater samples collected from four of the five new monitoring wells during monitoring events by RETEC between October 1993 and September 1994. Groundwater samples collected at the property during the course of investigations were not analyzed for DRPH or ORPH.

PCS exceeding MTCA Method A CULs remained at this site to the north and east limits of the final excavation and at the base of the excavation (at approximately 20 to 25 feet bgs). RETEC advised in their Revised Site Characterization Report that "the volume of soil exceeding clean-up levels is difficult to predict based on existing data" (RETEC 1995). RETEC further advised that "the source of groundwater contamination at the site originated from fuel handling practices and the storage of fuels in leaky USTs. Contaminated soil not removed during the previous excavations serves as a continuing source of contamination to groundwater" (RETEC 1995).

3.7 AMERICAN LINEN SUPPLY CO. SITE SUMMARY

American Linen Supply Co. at 700 Dexter Avenue North operated approximately 200 feet west of the Property in an inferred upgradient hydrologic position relative to the Property. Based upon the findings of previous investigations performed at the American Linen Supply Co. site by SoundEarth and others, this site includes soil, soil vapor, and groundwater contaminated with one or more of the following: GRPH, DRPH, ORPH, PCE, TCE, vinyl chloride, and cis-1,2-DCE beneath that property and portions of the south- and east-adjoining properties. This contamination also extends beneath the 8th, 9th, and Westlake

Avenues North and Valley, Roy, and Broad Streets ROWs, and beneath the Property. The impacts beneath this site are likely associated with the following: (1) a release of chlorinated solvents from the industrial laundry and dry cleaning facility that operated on the 700 Dexter Avenue North property between 1925 and 1995 and (2) the operation of at least two refueling facilities that historically operated on the northern portion of that property and on the east-adjoining properties (800–802 Roy Street). The highest concentrations of chlorinated solvents are located in the west-central portion of the 700 Dexter Avenue North property. Data developed by SoundEarth indicates that the lateral distribution of petroleum contamination in soil and groundwater associated with this site is bound to the east in the 8th Avenue North ROW, approximately 140 feet to the west of the Property. PCE in groundwater extends from the 700 Dexter Avenue property downgradient and beneath the Property to 9th Avenue North to the east.

A cleanup action in the form of an electrical resistive heating/soil vapor extraction system was recently completed at the 700 Dexter Avenue North property.

4.0 CONCEPTUAL SITE MODEL

This section provides a conceptual understanding of the Site derived from the results of the historical research and the subsurface investigations performed at the Site. Included is a discussion of the confirmed and suspected source areas, the COCs, the media of concern, the fate and transport of the COCs, and the TEE.

A CSM serves as a basis for developing technically feasible cleanup alternatives and for selecting a final cleanup action. A CSM is dynamic and may be refined throughout implementation of a cleanup action as additional information becomes available. This section discusses the components of the CSM developed for the Site.

4.1 SOURCE AREAS

The primary sources of contamination beneath the Site are the OWS in the northwest corner of the building on the Property and the waste oil UST located below the central-western portion of the building, as supported by the distribution of elevated concentrations of petroleum hydrocarbons and/or metals in soil in their vicinities.

The unknown extent of contaminated media on the adjacent Maaco property and Roy Street Shops site represent potential sources for migration of petroleum contamination onto the Site.

Groundwater contaminated with chlorinated solvents is suspected to be in place beneath the Property. The PCE and daughter products, if present, are known to derive from the existing contaminant plume sourced at the American Linen Supply Co. site located at 700 Dexter Avenue North.

4.2 CHEMICALS AND MEDIA OF CONCERN

The COCs for the Site are those compounds that were detected at concentrations exceeding their applicable cleanup levels. The media of concern are those subsurface components that are known or suspected to contain the contaminant particles.

4.2.1 Chemicals of Concern

The primary COCs identified for the Site are DRPH, ORPH, and GRPH. Other COCs include lead and mercury.

4.2.2 Media of Concern

The media of concern for the Site is soil.

Groundwater with petroleum concentrations in excess of cleanup levels has been observed beneath the Property. However, the primary source of the groundwater petroleum contamination remains undefined with the adjacent, cross- and upgradient Maaco property and Roy Street Shops site serving as potential contaminant sources. In addition, groundwater contaminated with chlorinated solvents is likely present beneath the southwestern portion of the Property. The solvent contamination has migrated from an off-Property source (the American Linen Supply Co. site). While groundwater contamination on the Property is not considered part of the Site as defined in Section 1.0, it is addressed as part of the Property redevelopment and cleanup.

The likely presence of chlorinated solvent-contaminated groundwater beneath the Property indicates that air as soil vapor is also a potential media of concern. However, the planned installation of a waterproof foundation during Property redevelopment will act as a vapor barrier and thus remove soil vapor as media of concern following completion of the redevelopment activities.

4.3 CONTAMINANT FATE AND TRANSPORT

This section discusses the fate and transport characteristics of GRPH and DRPH in soil, groundwater, and ambient air at the Site that are relevant to the evaluation of potential remedial technologies.

4.3.1 Transport Mechanism Affecting the Distribution of Petroleum Hydrocarbons in the Subsurface

The transportation and distribution of petroleum hydrocarbons in the vadose zone beneath the Property is controlled by a number of factors, including the following:

- The mass of contamination released from the source area.
- The vertical migration of dissolved-phase petroleum hydrocarbons through the soil column due to gravity driven advection.
- Adsorption and desorption of contaminants from soil particles and organic matter. Adsorption is a function of moisture content of the soil, the organic-carbon partitioning coefficient for the contaminants, and the concentration of organic matter in the soil.
- The diffusive transport of contaminated vapors from areas of high to low concentrations.
- Advective transport of vapors due to changes in pressure and temperature gradients.
- Depth to groundwater.

The transportation and distribution of petroleum hydrocarbons in the groundwater controls the lateral and vertical migration of petroleum hydrocarbons by advection and dispersion transport mechanisms. Advection is a function of hydraulic conductivity of the aquifer material and the hydraulic gradient of the groundwater. Under advective transport, dissolved contaminants follow the direction of groundwater flow, sometimes referred to as the advection front. Dispersive mixing causes some contaminant molecules to move ahead (longitudinal) of the average advective velocity along the hydraulic gradient and some molecules to move laterally (transverse) to the hydraulic gradient. The net effect is to spread (disperse) the contaminant plume about the advective front. The amount of spreading is related to the dispersivity of the soil, microscopic velocities through the pore spaces in the soil, the advective velocity of groundwater flow, and the molecular diffusion of the contaminant in the water within the pore space.

4.3.2 Environmental Fate of Petroleum Hydrocarbons in the Subsurface

Once petroleum hydrocarbons enter the subsurface, natural attenuation of the compound begins. The natural attenuation processes include intrinsic abiotic and biotic degradation in the groundwater and soil and adsorption onto soil particles. Both abiotic and biotic processes degrade petroleum hydrocarbons to carbon dioxide, assuming the appropriate geochemical conditions are present in soil and groundwater. Adsorption onto soil particles retards the vertical and lateral migration of petroleum hydrocarbons. In addition, advection and dispersion dilute the concentration of petroleum hydrocarbons in the groundwater as the compounds migrate downgradient from the source areas.

4.4 NATURE AND EXTENT OF CONTAMINATION AT THE SITE

The nature and extent of petroleum hydrocarbon contamination on the Property has been defined through a series of subsurface investigations conducted between 1988 and 2014.

The vertical extent of soil impacts is limited to the shallow subsurface, as defined by the collection of soil samples containing no detectable COCs from approximately 20 feet bgs below all recognized areas of contamination; in borings PB01 and PB07 in the vicinity of the OWS and in boring PB02 in the vicinity of the waste oil UST.

The lateral extent of petroleum and metal contamination in soil on the Site has not been fully defined by the investigations completed to this point. The impacts are bound to the Property to the east of the source areas by existing analytical information (numerous soil borings). The contamination in the vicinity of the waste oil UST is bound to the west by analytical data collected in soil boring BH4. The contamination in the vicinity of the OWS has not been bound to the west or north, nor has the contamination in the vicinity of the waste oil UST been bound to the south. In both cases the relatively low contaminant concentrations, the depth of the local groundwater table, and the hydrologic gradient's eastern trend strongly indicate that any additional impacts would be limited to the source locales. In addition, redevelopment of the Property will entail removal of the recognized source areas and mass excavation of PCS in the vadose zone across the Property's limits.

Observed groundwater contamination on the Property is not currently considered part of the Site as described in Section 1.0. However, proposed redevelopment of the Property will include the extraction of approximately 7 to 10 million gallons of groundwater for construction dewatering purposes. Thus, it is reasonable to conclude that all contaminated groundwater currently on the Property will be removed.

Following completion of excavation activities, a waterproof foundation will be installed on the Property from lot-line to lot-line that will serve as a barrier to prevent future migration of contamination onto the Property.

The presence or absence of volatile organics in the indoor ambient air as a result of chlorinated solvent contamination in the groundwater beneath the Property has not been evaluated. However, redevelopment of the Property will include the installation of a passive vapor barrier in the form of the planned foundation and two-story subgrade parking garage.

4.5 POTENTIAL EXPOSURE PATHWAYS

There are two general types of receptors that are potentially at risk from exposure associated with the presence of petroleum hydrocarbons in soil and groundwater at the Site. The receptors include terrestrial wildlife (birds and burrowing animals) and humans (commercial, utility, construction, and environmental workers). Because the Site qualifies for a TEE exclusion based on WAC 173-340-7491 and discussed further in Section 4.6, below, mitigating the potential human health risk, if any, associated with exposure to the petroleum hydrocarbons in the affected medium at the Site will be the primary objective of any cleanup action implemented. This section presents the evaluation and conclusions pertaining to the exposure pathways at the Site. The goal of this section is to identify potential exposure scenarios that will assist in the evaluation of potential feasible cleanup alternatives that are protective of terrestrial and human health. The CSM highlighting the source areas, potential pathways, and potential receptors for each medium of concern is discussed below.

4.5.1 Soil

Soil with concentrations of petroleum hydrocarbons exceeding applicable MTCA Method A cleanup levels presents a potential risk to human receptors. The potential release mechanism for soil at the Site includes soil to groundwater by leaching, airborne dust generated during remediation and redevelopment of the Property, and volatilized contaminants in the soil. The potential exposure pathways for soil that could be complete are as follows:

- **Dermal Contact and Ingestion (Direct Contact) of Contaminated Soil.** The release mechanisms for this exposure pathway include soil and leaching of contaminants from soil to groundwater. This exposure pathway may be complete for environmental field personnel and construction and utility workers who may come in contact with contaminated soil and groundwater during excavation and dewatering operations. Groundwater at the Site is not a likely source for drinking water. Drinking water at the Site and vicinity is supplied by the City of Seattle.
- **Inhalation of Airborne Soil.** The release mechanism for this exposure pathway is the inhalation of airborne soil particles during excavation and construction activities on the Property. This exposure pathway could be complete for environmental field personnel and construction and utility workers during redevelopment.
- **Inhalation of Vapors.** The release mechanism for this exposure pathway is volatilization. This exposure pathway may be complete for environmental, construction, and utility workers during redevelopment of the Property. When the Site is redeveloped, engineering and institutional controls will eliminate this pathway for future residence and commercial workers.

4.5.2 Groundwater

Contaminated groundwater presents a potential risk to workers only because the groundwater beneath the Property is not a potential source for drinking water and the groundwater does not discharge to any nearby surface water body. The potential release mechanism for groundwater is vapor migrating from groundwater to the outdoor and indoor ambient air. The potential exposure pathways for groundwater and the potential receptors include the following:

- **Direct Contact and Ingestion of Contaminated Groundwater.** This exposure pathway may be complete for environmental field personnel and construction and utility workers during redevelopment of the Site. This pathway is not complete for current commercial workers at the Site because drinking water is supplied by the City of Seattle. Future exposure to contaminated groundwater by commercial workers and residents is unlikely because institutional and engineering controls will eliminate any potential exposures to contaminated groundwater. Therefore, the direct contact pathway will be incomplete for residents and commercial workers at the completion of the redevelopment.
- **Inhalation of Vapors.** The release mechanism for this exposure pathway is volatilization of contaminants in the groundwater. This exposure pathway could be complete for environmental, construction, and utility workers during redevelopment of the Site. At the completion of the redevelopment, engineering and institution controls will eliminate the inhalation pathways at the Site for commercial workers and residents.

4.5.3 Vapor

The presence or absence of VOCs in indoor and outdoor ambient air as a result of petroleum hydrocarbon and/or chlorinated solvents contamination in the vadose zone and groundwater beneath the Site has not been determined. However, the future redevelopment of the Site will result in the mass excavation of soil to a depth of approximately 26 feet bgs (elevation 7 feet above mean sea level; NAVD88) and the installation of a vapor barrier to mitigate any vapors that may originate from residual contamination beneath the Site after completing the redevelopment. Therefore, this pathway is considered incomplete for commercial workers and residents that may occupy the Site after redevelopment.

4.6 TERRESTRIAL ECOLOGICAL EVALUATION

A TEE is required by WAC 173-340-7940 at locations where a release of a hazardous substance to soil has occurred. The TEE is intended to assess potential risk to plants and animals that live entirely or primarily on affected land. A simplified TEE was required under MTCA to assess the potential ecological risks posed by contamination at the Site, and to evaluate whether a more detailed investigation of potential ecological risk would be required. SoundEarth conducted a simplified TEE in accordance with Table 749-1 of WAC 173-340-900 and the protocols established in WAC 173-340-7492 to assess the potential ecologic risk associated with the presence of COCs at the Site.

The Site qualifies for a TEE exclusion based on WAC 173-340-7491. The results of ranking for the simplified TEE under Table 749-1 of WAC yields a score of 10, which qualifies the Site for the TEE exclusion per WAC 173-340-7492(2)(a)(ii) on the basis that land use at the Site and surrounding area makes substantial wildlife exposure unlikely (Appendix E). The TEE considers Site area, Site land use, Site

habitat quality, likelihood that the Site will attract wildlife, and COCs occurring in Site soil. No further consideration of ecological impacts is required under MTCA.

5.0 TECHNICAL ELEMENTS

RAOs are used to define the technical elements for the screening evaluation and to select remedial alternatives. The technical elements summarize the ARARs and the cleanup standards, including cleanup levels and points of compliance.

5.1 REMEDIAL ACTION OBJECTIVES

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

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

In particular, RAOs must address the following threshold requirements set forth in WAC 173-340-360(2)(a):

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

The RAOs consist of bringing the Property into compliance with the applicable cleanup criteria for each of the COCs in order to obtain a Property specific NFA determination for the Property.

5.2 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

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

MTCA defines relevant and appropriate requirements as:

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

suited to the particular site. The criteria specified in WAC 173-340-710(3) shall be used to determine if a requirement is relevant and appropriate.

Remedial actions conducted under MTCA must comply with the substantive requirements of the ARARs. ARARs were screened to assess their applicability to the Site. The following table summarizes the preliminary ARARs for the Site.

Preliminary ARARs for the Site

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

5.3 CLEANUP STANDARDS

The selected cleanup alternative must comply with the MTCA cleanup regulations specified in WAC 173-340 and with applicable state and federal laws. The CULs selected for those portions of the Site located within the Property boundary and for the greater Site are consistent with the RAOs, which state that the remedial objective is to reduce concentrations of COCs in soil and groundwater beneath the Property to below their applicable CULs. In addition to mitigating risks to human health and the environment, achieving the RAOs will allow Ecology to issue a Property-specific NFA determination. The associated media-specific CULs for the identified COCs and the points of compliance at which the CULs shall be met are summarized in the following sections.

5.3.1 Cleanup Levels

The CULs for the media and COCs are tabulated below, including the source of the cleanup standard. The proposed CUL for impacted soil beneath the Property is the MTCA Method A Standard Formula Value for COCs.

5.3.1.1 Soil

The proposed cleanup levels for soil at the Site are summarized in the following table.

Proposed Cleanup Levels for Soil

COC	Cleanup Level (mg/kg)	Source
GRPH	30	MTCA Method A, Unrestricted; WAC 173-340-740(2)(b)(i)
DRPH	2,000	
ORPH	2,000	
Lead	250	
Mercury	2	

NOTES:
COC = chemical of concern
DRPH = diesel-range petroleum hydrocarbons
GRPH = gasoline-range petroleum hydrocarbons
mg/kg = milligrams per kilogram
MTCA = Washington State Model Toxics Control Act
ORPH = oil-range petroleum hydrocarbons
WAC = Washington Administrative Code

5.3.2 Points of Compliance

The point of compliance is the location where the enforcement limits that are set in accordance with WAC 173-200-050 will be measured and cannot be exceeded (WAC 173-200-060). Once the CULs have been attained at the defined points of compliance, the impacts present beneath the Property will no longer be considered a threat to human health or the environment.

5.3.2.1 Point of Compliance for Soil

In accordance with WAC 173-340-740 (6) (b-d), the point of compliance for direct contact exposure is throughout the Property from the ground surface to 15 feet bgs, which is a reasonable estimate of the depth of soil that could be excavated and distributed at the soil surface as a result of redevelopment activities. All soil containing concentrations of COCs above the MTCA Method A CULs will be overexcavated and removed from the Property.

5.3.2.2 Point of Compliance for Groundwater

In accordance with WAC 173-340-720(8)(a)(b), the point of compliance for groundwater is defined as the uppermost level of the saturated zone extending vertically to the lowest depth that potentially could be impacted by the COCs at the Site. However, the groundwater underlying the Property has been impacted by a release or releases from a property or properties upgradient to the west. The existing monitoring wells located within the west-adjacent alleyway and east-adjacent 9th Avenue North will be utilized by others to evaluate groundwater after implementation of the Property cleanup action.

6.0 SELECTED CLEANUP ACTION PLAN

This section summarizes the feasible remedial alternatives reviewed during the selection of the cleanup action alternative and outlines the components associated with the cleanup action.

6.1 EVALUATION OF FEASIBLE CLEANUP ALTERNATIVES

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

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

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

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

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

Based on the above criteria and the planned development excavation of the Property, the selected cleanup action for the Site is excavation with directly discharged dewatering, which is compatible with the redevelopment of the Property. The entire Property will be excavated for redevelopment from lot-line to lot-line. The depth of the redevelopment excavation will extend down approximately to elevation 7 feet NAVD88 on the northwestern quarter of the Property, grading up to elevation 16 feet NAVD88 near the southwest Property corner and other areas of the Property, with deeper penetrations for footings and elevator pits These elevations are approximately 4 to 15 feet below the extent of soil impacts, as shown on cross sections on Figures 3 and 4.

Groundwater will be removed from the excavation extent and be either discharged or treated as follows:

1. Discharged directly to the City of Seattle-owned sanitary sewer system in compliance with all permitted requirements, assuming that chlorinated solvent levels are within METRO screening levels.
2. Treated with granular-activated carbon (GAC) by others and discharged to surface water by way of a stormwater line within the 9th Avenue ROW in compliance with all permitted requirements.

Redevelopment plans include construction of a waterproofed subgrade structure with two levels of subgrade parking. The waterproofing, coupled with a manufacturer-certified and properly installed vapor barrier, will eliminate vapor intrusion concerns for the Property.

In summary, the redevelopment excavation will remove all soil and groundwater with COCs exceeding MTCA CULs on the Property (Figure 6).

The key assumptions for the selected cleanup action include the following:

- All permits associated with the construction excavation and site redevelopment activities are a redevelopment-related cost.
- All monitoring wells within the construction excavation boundary will be decommissioned.
- A hazardous materials survey will be completed for all of the buildings on the Site before demolition. Any abatement costs are considered to be a redevelopment-related cost.
- UST decommissioning activities will be overseen by a certified professional with Site Assessor/Decommissioner certifications. The necessary closure reports will be filed with Ecology.
- Approximately 5,900 tons of known contaminated soil will be excavated from the northern half of the Property and disposed of at a Subtitle D landfill.
- Approximately 5,200 tons of mildly impacted soil will be excavated from the northern half of the Property and disposed of at an appropriate facility.
- An unknown amount of both contaminated and mildly impacted soil may be present under the southern half of the Property, which has not been accessible for subsurface investigation work. A subsequent subsurface investigation will be completed when access is allowed, and soil remediation estimates will be adjusted based upon those results.
- Significant dewatering is anticipated and is considered to be a redevelopment-related cost. However, GAC treatment will be required for discharge to surface waters.

6.2 SELECTED CLEANUP ACTION DESCRIPTION

Excavation integrated with the planned redevelopment and land disposal of soil is the recommended cleanup action alternative. The cleanup action entails the full source removal excavation within the limits of the Property. This remedial method achieves the RAOs and meets the requirements set forth in WAC 173-340-360(3) and WAC 173-340-370. The cleanup action includes the following components.

6.2.1 Demolition

Because the remediation activities would be conducted as part of a larger redevelopment project, all buildings on the Property would be demolished before beginning shoring and

excavation. A hazardous materials survey would be conducted before building demolition. Any necessary abatement of hazardous materials would be performed by a qualified contractor.

6.2.2 Shoring

Shoring would be required to protect the safety of personnel working in the excavation and the surrounding infrastructure in ROWs and properties from damage due to slope failure. The shoring would enable the removal of source-contaminated soil for Property redevelopment to an approximate elevation of 7 feet NAVD88 (approximately 26 feet below grade). Shoring would be installed around the entire perimeter of the redevelopment.

6.2.3 Remedial Excavation Area

The entire Property would be excavated from lot-line to lot-line, as shown on Figure 6. The known Remedial Excavation Area is defined as the vertical and horizontal limits of soil exhibiting detectable concentrations of COCs within the Property boundary that will require disposal at other than "clean" fill sites (Figures 3, 4, and 5). Removal of the heating oil UST(s) would be conducted before the construction excavation. The tank(s) would be removed in accordance with Ecology's UST regulations (WAC 173-360) and is exempt from Ecology reporting requirements. However, all PCS surrounding the tank would be removed.

The depth of the known Remedial Excavation Area across the Property is approximately 12 to 13 feet. Based on the estimated depth and estimated lateral extent of contaminated and mildly impacted soil, the tonnage of soil within the known Remedial Excavation Area would be approximately 11,100 tons. Soil would be excavated within the confines of the shoring as designed by the civil engineer and would be temporarily stockpiled or directly loaded into trucks for off-Property land disposal at a permitted Subtitle D landfill or an acceptable alternative based on analytical characterization of the soil. It is important to note that forthcoming investigation work on the southern portion of the Property may reveal additional currently unknown remediation areas.

6.2.4 Construction Dewatering

Construction dewatering will be implemented to remove groundwater encountered during excavation activities and any accumulated surface water during the course of the excavation. Dewatering will be accomplished by utilizing a series of dewatering wells. The wells may be located both peripherally and within the Property boundary. Anticipated dewatering and discharge rates will be approximately 250 to 400 gallons per minute during much of the duration of the dewatering effort, which will take place over a 9- to 12-month time period. Excavation dewatering will facilitate soil removal activities within both the shallow and deeper water-bearing zones. The groundwater will be discharged to the sanitary sewer system or to surface waters within permissible permit parameters.

6.2.5 Impermeable Vapor and Water Barrier

The removal of all on-Property soil contamination via excavation, subgrade waterproofing coupled with a manufacturer-certified and properly installed vapor barrier will prevent intrusion and/or collection of unsafe levels of COC vapors into the parking garage and above-grade building.

6.3 CLEANUP ACTION OBJECTIVES

The objectives of the cleanup action for the Site established in consideration of the future use of the Property include the following:

- Excavating on-Property soil containing TPH and metals to concentrations below MTCA Method A cleanup levels that present a risk to human health and the environment.
- Treating and discharging CVOC-impacted dewatering fluids during construction.
- Installing a waterproof foundation system and vapor barrier from lot-line to lot-line that will serve as a vapor and groundwater barrier for the Property.
- Acquiring a Property-specific NFA determination letter for the Property.

7.0 CLEANUP ACTION IMPLEMENTATION PLAN

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

7.1 CLEANUP ACTION IMPLEMENTATION DOCUMENTS

A detailed Sampling and Analysis Plan (SAP) and Site-Specific Health and Safety Plan (HASP) were prepared as part of the cleanup action plan and are appended to this RI/CAP Report.

The purpose of the SAP is to ensure that the sample collection, handling, and analysis conducted after completion of the cleanup action will result in data that meet the data quality objectives for the cleanup action at the Site. The SAP includes requirements for sampling activities, including sampling frequency and location, analytical testing, documentation, and quality assurance/quality control (QA/QC) for compliance monitoring. The SAP also defines the data quality objectives and standard operating procedures for the cleanup action and details regarding sample collection and analysis, including sample collection procedures, analytical methods, QA/QC procedures, and data quality reviews (Appendix F).

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

7.2 CONSTRUCTION SUMMARY, EXCAVATION, LAND DISPOSAL OF CONTAMINATED SOIL, AND DISCHARGE OF CONSTRUCTION DEWATERING

This section summarizes the construction activities and procedures included in the cleanup action. The excavation contractor will mobilize to the Property and set up operational areas necessary to implement the cleanup action. The estimated limits of the remedial excavation are shown on Figure 6, and Site work will generally proceed as described in the following sections.

7.2.1 Site Preparation and Mobilization

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

7.2.2 Demolition and UST Decommissioning

A hazardous materials survey will be completed for all the buildings on the Property before demolition. If abatement measures are necessary, the contractor will perform these activities prior to the demolition of the buildings.

All known USTs on the Property will be decommissioned and a UST site assessment will be conducted under the oversight of a Washington State certified UST site assessor. The UST will be removed in accordance with the *Guidance for Site Checks and Site Assessment for Underground Storage Tanks* (Ecology 2003), "Underground Storage Tank Regulations" (WAC 173-360), and *Guidance for Remediation of Petroleum Contaminated Sites* (Ecology 2011).

7.2.3 Well Decommissioning

Monitoring wells within the footprint of the excavation area will be decommissioned by a licensed well driller or under the supervision of a professional engineer, in accordance with the Ecology Water Well Construction Act (1971), RCW 18.104 (WAC 173-160-460). The wells will be abandoned in place using bentonite clay. The well scheduled to be decommissioned is MW1 (Figures 2 and 3).

7.2.4 Shoring Installation

Shoring will be installed around the entire perimeter of the redevelopment. The shoring design will be incorporated into the future redevelopment plans and is not presented in this RI/CAP Report. Shoring will be installed in progressive increments as the excavation proceeds in order to facilitate the safe excavation of contaminated soil to the required depth.

7.2.5 Shoring and Excavation Sequence

The bulk excavation will begin after the completion of the following items:

- Installing TESC measures.
- Establishing site security and fencing.
- Demolishing existing buildings.
- Preparing ingress and egress pathways.
- Decommissioning monitoring wells within the Remedial Excavation Area.
- Decommissioning and removal of the suspect and discovered USTs.
- Installing the shoring system (as the excavation proceeds).

Approximately 5,900 tons of contaminated soil will be excavated from the Site and disposed of at a Subtitle D landfill on the northern portion of the Property. SoundEarth will use a soil management grid, which breaks the entire Remedial Excavation Area into 15-foot by 15-foot grid cells, to readily identify and classify each grid cell for proper off-site disposal. Soil will be

visually inspected for staining, sheen, and odor. In addition to physical observations, a photoionization detector will be used to quantitatively measure VOCs in the soil. As the excavation proceeds vertically downward, the shoring will be extended in accordance with the shoring wall design.

When performance samples show that all of the PCS has been removed from the identified Remedial Excavation Area, the larger redevelopment excavation and soil screening will resume. The contractor will make an effort to comply with the following: (1) minimize the cross contamination of clean soil during the excavation of the Remedial Excavation Area by directly loading the contaminated soil, if feasible, and minimizing tracking of soil across the Property; (2) establish an exclusion zone and place site controls, such as tire and truck wash stations, at the edge of the exclusion zone; and (3) limit the excavation daily to only remove contaminated soil to ensure proper decontamination of equipment before excavating clean soil, if feasible.

7.2.5.1 Contingency Plan to Address Unknown Contamination

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

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

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

In the event that a previously unidentified UST is encountered during the course of the excavation activities, a UST site assessment will be conducted under the oversight of a Washington State certified UST site assessor and the UST will be removed in accordance with the *Guidance for Site Checks and Site Assessment for Underground Storage Tanks* (Ecology 2003), *Underground Storage Tank Regulations* (WAC 173-360), and *Guidance for Remediation of Petroleum Contaminated Sites* (Ecology 2011). In the event that impacts to soil are observed,

performance and confirmational soil samples will be collected and analyzed to ensure that the contaminated soil is removed and properly characterized before disposal.

7.2.6 Construction Dewatering and Discharge

The Site excavation will advance into the shallow water-bearing zone beneath the Property. Groundwater is expected to accumulate in the excavation, and significant dewatering will be needed to facilitate excavation completion and installation of the planned foundation. A permit will be acquired in advance of any discharge from the Property, and the discharge will be conducted in compliance with all permitted requirements.

As discussed above, the final elevation of the excavation is anticipated to be approximately 7 feet to 16 feet NAVD88, or approximately 1 to 13 feet below the top of the primary water-bearing zone; therefore, extensive dewatering is anticipated. The dewatering design will be incorporated into the future redevelopment plans and are not presented in this RI/CAP Report.

7.2.7 Parking Structure

Construction of the subgrade parking structure will commence after the excavation is completed. Preliminary plans indicate two full levels and one partial third level of subgrade parking will be constructed. Based on initial redevelopment discussions, a waterproof foundation is planned, taking into consideration the depth of the excavation (approximately 7 feet to 16 feet NAVD88) and the location of the primary water-bearing zone (approximately 17 feet NAVD88).

The subgrade waterproofing and vapor barrier system will be constructed to act as a barrier to recontamination and vapor intrusion from any groundwater plume within the ROWs or adjacent alleys associated with the American Linen Supply Co. site, Maaco property, or the Roy Street Shops site. However, groundwater underneath the building will likely remain impacted with CVOCs from the previously discussed off-property source or sources.

8.0 COMPLIANCE MONITORING

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

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

8.1 PROTECTION MONITORING

A HASP has been prepared for the cleanup action that meets the minimum requirements for such a plan identified in federal (29 CFR 1910.120, 29 CFR 1926) and state regulations (WAC 296). The HASP

identifies all known physical, chemical, and biological hazards; hazard monitoring protocols; and administrative and engineering controls required to mitigate the identified hazards (Appendix G).

8.2 PERFORMANCE MONITORING

Performance monitoring includes the collection of soil samples from the sidewalls and floor of the Remedial Excavation Area and the removal of any previously unidentified contamination.

8.2.1 Soil Performance Monitoring

Performance monitoring for soil will be conducted during remedial excavation activities and will be used to direct advancement of the excavation. Soil samples will be collected directly from the sidewalls and/or bottom of the Remedial Excavation Area using stainless steel and/or plastic sampling tools. Soil samples collected at depths of less than 4 feet bgs will be collected manually. Samples collected at depths below 4 feet bgs will be collected with the backhoe bucket unless engineering controls are in place that allow for manual sample collection at depths greater than 4 feet bgs. Non-dedicated sampling equipment will be decontaminated between uses. A detailed scope for monitoring, sampling, and analysis is discussed in the SAP (Appendix F). The analytical results will be used to assess when the points of compliance for soil have been achieved.

8.2.2 Groundwater Performance Monitoring

Performance monitoring for groundwater will be conducted as needed to ensure compliance with all requirements of the discharge permit. Any sample collection will be completed following the specific guidelines that are stated in the SAP (Appendix F).

8.2.3 Waste Profiling

Wastes generated during the remedial activities will require analytical testing before disposal. Generally, the treatment, storage, and disposal facility (TSDF) receiving the waste specifies the minimum number of samples and analyses before accepting wastes from a site. Wastes that will be generated from the remedial action and destined for off-site disposal include the following:

- PCS
- Contaminated personal protective equipment
- Decontamination solutions
- Miscellaneous solid wastes

Each waste stream will be profiled separately, in accordance with the minimum waste analyses requirements of the respective permitted TSDF. Excavated contaminated soil will be subjected to performance monitoring. The Ecology document *Guidance for Remediation of Petroleum Contaminated Sites* (Ecology 2011) suggests that samples of stockpiled excavated soil be collected from locations where field survey methods indicate that contamination is likely to be present, and to collect samples from a depth of 6 to 12 inches beneath the surface of the stockpile.

8.3 CONFIRMATIONAL MONITORING

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

8.3.1 Soil Confirmational Monitoring

Confirmational monitoring for soil will be conducted after completion of the remedial excavation to assess the concentrations of COCs in subsurface soil, to verify compliance with applicable cleanup standards, and to confirm the long-term effectiveness of the cleanup action. Soil samples will be collected from the bottom and the sidewalls of the remediation areas to an estimated maximum depth of 26 feet bgs on the Property. The locations of the soil samples will be established by field screening, as described in the SAP (Appendix F). At a minimum, a sample will be taken every 15 linear feet of sidewall and every 15-foot by 15-foot section of the floor of the Remedial Excavation Area. Soil samples will be submitted for analysis of GRPH, DRPH, ORPH, lead, and mercury.

To confirm that cleanup levels have been achieved, the concentrations of COCs will be compared to their respective cleanup levels and, if applicable, evaluated in accordance with the Ecology document *Statistical Guidance for Ecology Site Managers* (Ecology 1992). As detailed in the guidance, confirming whether the Property is clean is based on a comparison of the 95th percent upper confidence limit on the mean (UCL_{95}) with the defined cleanup level. Each sample collected from the southeast corner of the Property will be analyzed for GRPH, DRPH, ORPH, BTEX, lead, and mercury at detection limits low enough to detect compliance with the cleanup levels. The resulting data will then be tested for conformance with distributional assumptions (normal versus lognormal) and the UCL_{95} calculated based on the methods described in Ecology's 1992 guidance document.

If the UCL_{95} for a specific chemical does not exceed the cleanup level, then the Property is considered clean; otherwise, it is still considered contaminated. The Property is considered clean when the UCL_{95} for each COC is less than its respective cleanup level. This statistical approach allows for post-sampling excavation to remove individual sample hot spots that cause exceedance of the cleanup levels and retesting to assess if the recalculated UCL_{95} exceeds the cleanup level.

8.3.2 Groundwater Confirmational Monitoring

Significant dewatering is anticipated as part of planned redevelopment of the Property. In consideration of the anticipated of 7 to 10 million gallons of water to be removed from the Property during construction activities, it is reasonable to expect that all residual groundwater contamination associated on the Property will be removed.

The planned redevelopment will include excavation of the full extent of the Property from lot-line to lot-line and installation of a foundation. The foundation will serve as a waterproof barrier to prevent recontamination of the Property by any upgradient contaminant plumes (e.g., the American Linen Supply Co. site, the Maaco property, or the Roy Street Shops site).

9.0 DOCUMENTATION REQUIREMENTS

Documentation of the cleanup action is necessary to meet MTCA requirements. The applicable and relevant documentation generated for the cleanup action will be submitted to Ecology for review and

approval. Copies of the documents will be retained in SoundEarth's files for a minimum of 3 years after completion of the cleanup action.

9.1 DOCUMENT MANAGEMENT

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

9.2 WASTE DISPOSAL TRACKING

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

9.3 COMPLIANCE REPORTING

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

- A description of the excavation and construction activities.
- Summary of the hazardous materials survey and any abatement activities, if required.
- Documentation of the UST decommissioning.
- Documentation of waste disposal tracking for the excavated soil, generated wastewater, and other associated materials.
- A figure depicting the final limits of the remedial excavation and the soil sample locations, as applicable.
- A summary of compliance monitoring analytical results.

When the compliance report has been finalized, the report will be submitted to Ecology for review and approval and a Property-specific NFA determination letter will be requested for the Property.

10.0 LIMITATIONS

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

Opinions and recommendations contained in this report are derived, in part, from data gathered by others, and from conditions evaluated when services were performed, and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We do not warrant and are

not responsible for the accuracy or validity of work performed by others, nor from the impacts of changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the use of segregated portions of this report.

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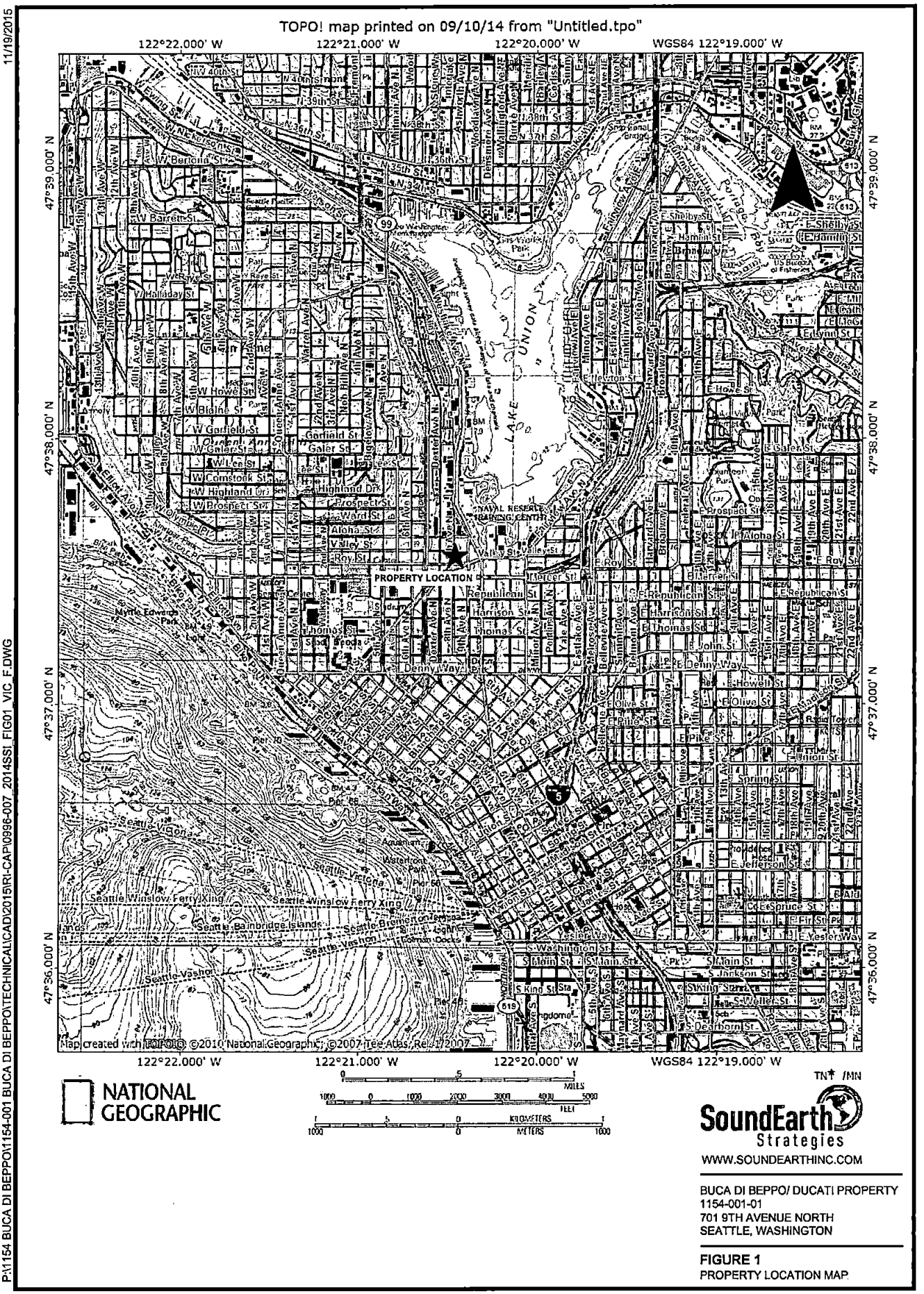
FIGURES

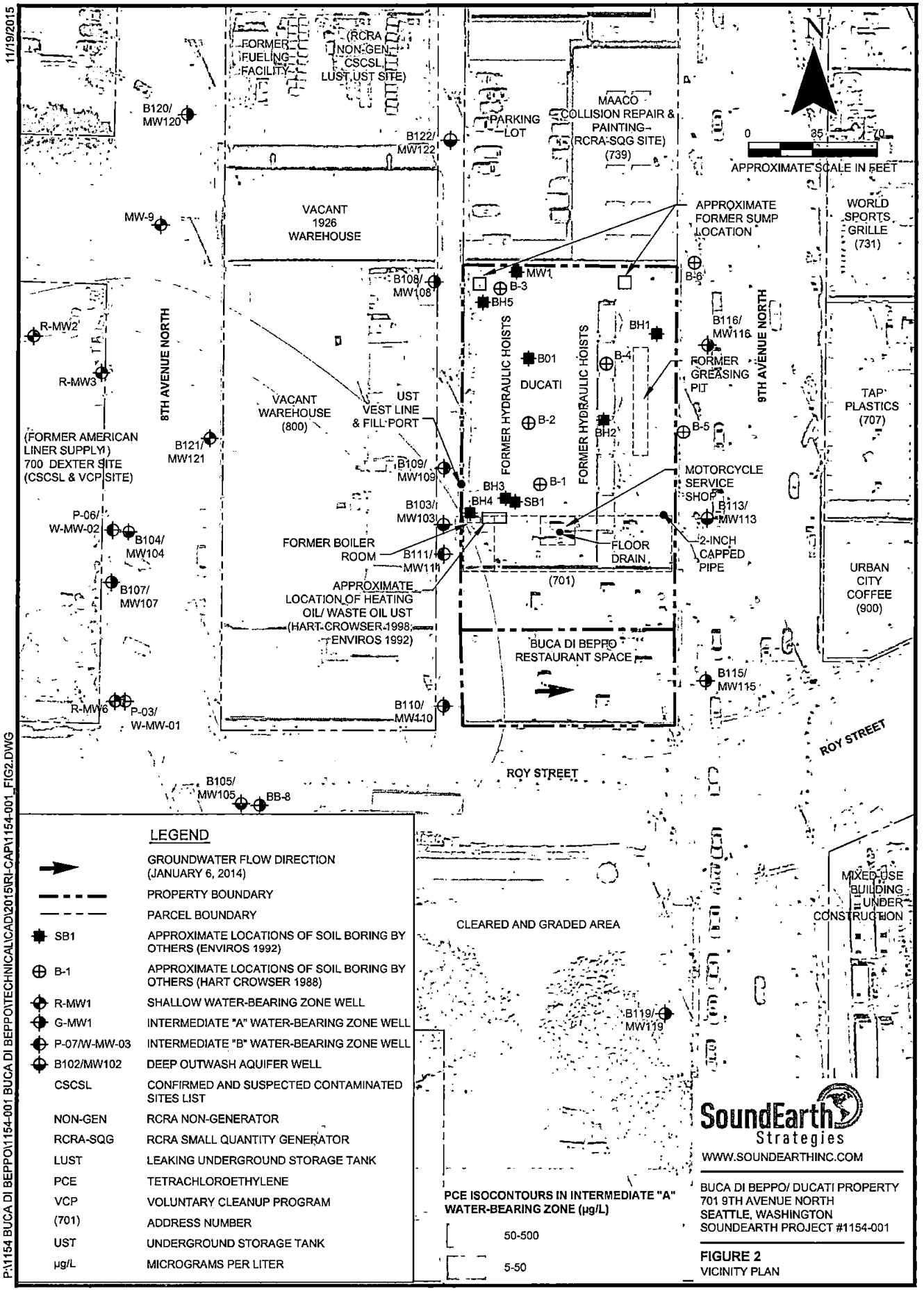


BUCA DI BEPPO/ DUCATI PROPERTY
1154-001-01
701 9TH AVENUE NORTH
SEATTLE, WASHINGTON

FIGURE 1
PROPERTY LOCATION MAP

11/19/2015

P:\1154 BUCA DI BEPPO\1154-001 BUCA DI BEPPO\TECHNICAL\CAD\2015\RI-CAP\0996-007_2014SSI_FIG01_VIC_F.DWG


11/19/2015
P:\1154 BUCA DI BEPPO\1154-001 BUCA DI BEPPO\TECHNICAL\CAD\2015\RI-CAP\1154-001_FIG2.DWG
N
0
35
70
APPROXIMATE SCALE IN FEET
FORMER FUELING FACILITY
(RCRA NON-GEN, CSCSL, LUST,UST SITE)
PARKING LOT
MAACO COLLISION REPAIR & PAINTING- (RCRA-SQG SITE) (739)
WORLD SPORTS GRILLE (731)
APPROXIMATE FORMER SUMP LOCATION
VACANT 1926 WAREHOUSE
B120/ MW120
B122/ MW122
MW-9
B108/ MW108
MW1
B-3
BH5
B-6
B116/ MW116
8TH AVENUE NORTH
9TH AVENUE NORTH
R-MW2
R-MW3
VACANT WAREHOUSE (800)
UST VEST LINE & FILL PORT
FORMER HYDRAULIC HOISTS
B01
DUCATI
B-2
BH1
B-4
FORMER GREASING PIT
BH2
B-5
TAP PLASTICS (707)
(FORMER AMERICAN LINER SUPPLY) 700 DEXTER SITE (CSCSL & VCP SITE)
B121/ MW121
B109/ MW109
BH3
BH4
SB1
B-1
MOTORCYCLE SERVICE SHOP
B113/ MW113
P-06/ W-MW-02
B104/ MW104
B103/ MW103
FORMER BOILER ROOM
B111/ MW111
FLOOR DRAIN
2-INCH CAPPED PIPE
(701)
URBAN CITY COFFEE (900)
B107/ MW107
APPROXIMATE LOCATION OF HEATING OIL/ WASTE OIL UST (HART-CROWSER 1998; ENVIROS 1992)
BUCA DI BEPPO RESTAURANT SPACE
B115/ MW115
R-MW6
P-03/ W-MW-01
B110/ MW110
ROY STREET
ROY STREET
B105/ MW105
BB-8
CLEARED AND GRADED AREA
MIXED-USE BUILDING UNDER CONSTRUCTION
B119/ MW119
LEGEND
GROUNDWATER FLOW DIRECTION (JANUARY 6, 2014)
PROPERTY BOUNDARY
PARCEL BOUNDARY
SB1 APPROXIMATE LOCATIONS OF SOIL BORING BY OTHERS (ENVIROS 1992)
B-1 APPROXIMATE LOCATIONS OF SOIL BORING BY OTHERS (HART CROWSER 1988)
R-MW1 SHALLOW WATER-BEARING ZONE WELL
G-MW1 INTERMEDIATE "A" WATER-BEARING ZONE WELL
P-07/W-MW-03 INTERMEDIATE "B" WATER-BEARING ZONE WELL
B102/MW102 DEEP OUTWASH AQUIFER WELL
CSCSL CONFIRMED AND SUSPECTED CONTAMINATED SITES LIST
NON-GEN RCRA NON-GENERATOR
RCRA-SQG RCRA SMALL QUANTITY GENERATOR
LUST LEAKING UNDERGROUND STORAGE TANK
PCE TETRACHLOROETHYLENE
VCP VOLUNTARY CLEANUP PROGRAM
(701) ADDRESS NUMBER
UST UNDERGROUND STORAGE TANK
µg/L MICROGRAMS PER LITER
PCE ISOCONTOURS IN INTERMEDIATE "A" WATER-BEARING ZONE (µg/L)
50-500
5-50
SoundEarth Strategies
WWW.SOUNDEARTHINC.COM
BUCA DI BEPPO/ DUCATI PROPERTY
701 9TH AVENUE NORTH
SEATTLE, WASHINGTON
SOUNDEARTH PROJECT #1154-001
FIGURE 2
VICINITY PLAN

11/19/2015

ALLEY WAY

SUSPECT WASTE OIL UST
(HART CROWSER, 1988)
ENVIROS, 1992)

HEATING FUEL FILL
AND VENT PIPES

OIL/WATER
SEPARATOR

N

0 10 20
APPROXIMATE SCALE IN FEET

FORMER
BOILER ROOM
(BASEMENT)

A

A'

B

B'

BH4

PB02

BH3

SB1

B-1

B-2

BH5

PB01

B-3

MW1

PB07

ROY STREET

SIDEWALK

ABANDONED 8" SEWER LINE

WALL

PB06

GARAGE

BH2

B-4

FORMER PIT

PB04

PB05

SUSPECT UST
FILL PORT

FORMER
MACHINE SHOP

BH1

FORMER
CATCH BASIN

PB03

SIDEWALK

B-5

B-6

NINTH AVENUE NORTH

LEGEND

SB1	PUSH-PROBE ANGLE BORING (SOUNDEARTH, 2014)
PB05	HOLLOW STEM ANGER BORING (ENVIROS, 1992)
BH5	BORING LOCATION (ENVIROS, 1992)
B-5	MONITORING WELL (ENVIROS, 1992)
MW01	BORING LOCATION (HART CROWSER, 1988)
MW-1	MONITORING WELL (HART CROWSER, 1988)
SS	SEWER LINE
SW	STORMWATER LINE
A A'	CROSS SECTION LOCATION

CONCENTRATIONS IN SOIL

	CONCENTRATIONS BELOW LABORATORY REPORTING LIMIT
	CONCENTRATIONS AT OR BELOW MTCA METHOD A CLEANUP LEVEL
	CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL
MTCA	WASHINGTON STATE MODEL TOXICS CONTROL ACT
UST	UNDERGROUND STORAGE TANK
	FORMER HYDRAULIC LIFTS

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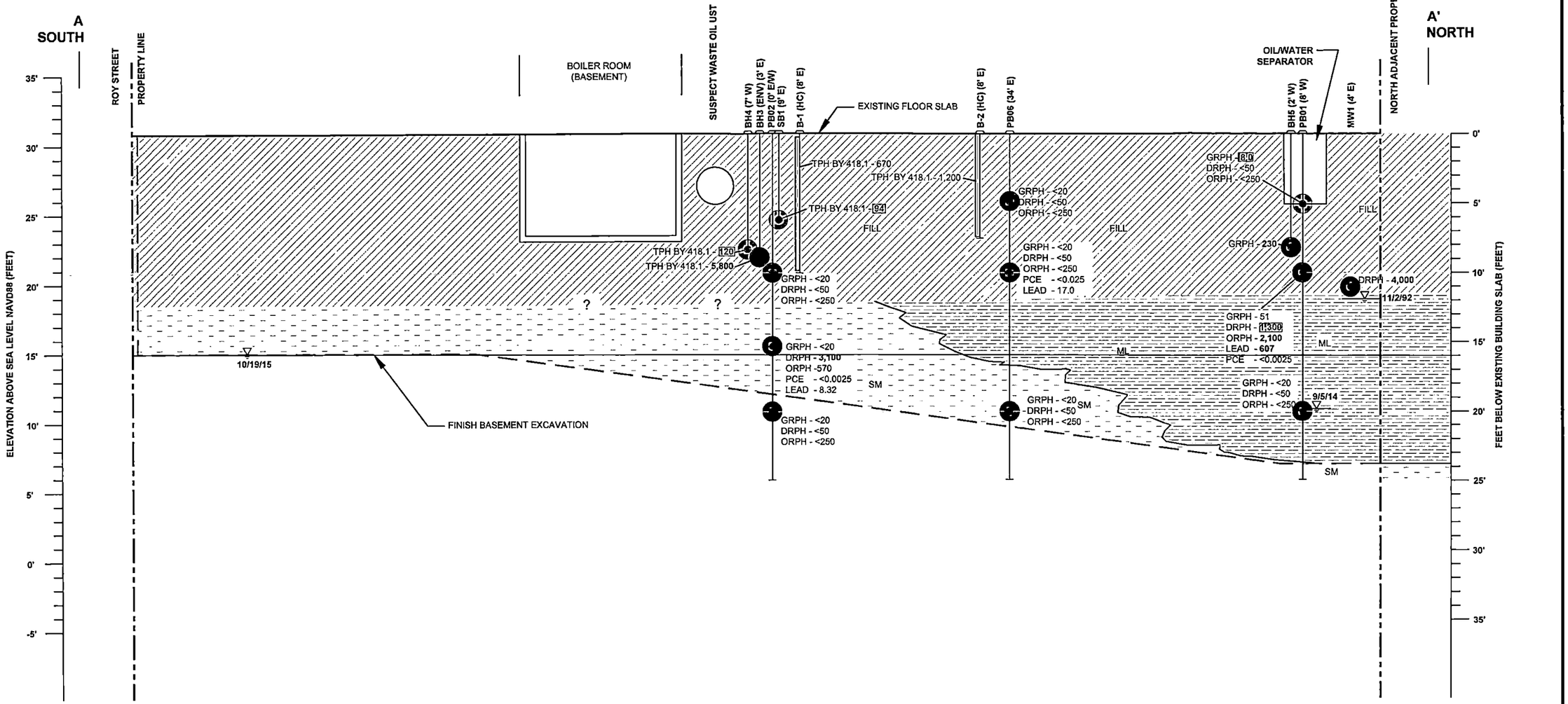
BUCA DI BEPPO/DUCATI PROPERTY
701 9TH AVENUE NORTH
SEATTLE, WASHINGTON
SOUNDEARTH PROJECT #1154-001

FIGURE 3
EXPLORATION LOCATION MAP AND ANALYTICAL SUMMARY

P:\1154 BUCA DI BEPPO\1154-001 BUCA DI BEPPO\TECHNICAL\CAD\2015\RI-CAP\1154-001_FIG3.DWG

10/28/2015



LEGEND

SM
SILTY SANDS, SAND - CLAY MIXTURES

ML
INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS

FILL
SILTY SANDS WITH GRAVEL

PROPERTY BOUNDARY

EXCAVATION EXTENTS

● OR ▌	SOIL SAMPLE LOCATION
<	RESULT BELOW LABORATORY REPORTING LIMITS
ASL	ABOVE SEA LEVEL
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
MTCA	WASHINGTON STATE MODEL TOXICS CONTROL ACT
GRPH	GASOLINE-RANGE PETROLEUM HYDROCARBONS
DRPH	DIESEL-RANGE PETROLEUM HYDROCARBONS
ORPH	OIL-RANGE PETROLEUM HYDROCARBONS
PCE	TETRACHLOROETHYLENE
UST	UNDERGROUND STORAGE TANK
TPH	TOTAL PETROLEUM HYDROCARBONS

MW11 (21' E) WELL OFFSET 21' EAST

BLANK CASING

9/5/14 WATER TABLE

WELL SCREEN INTERVAL

WELL TERMINATION

CONCENTRATIONS IN SOIL

CONCENTRATIONS BELOW LABORATORY REPORTING LIMIT

CONCENTRATIONS AT OR BELOW MTCA METHOD A CLEANUP LEVEL

CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL

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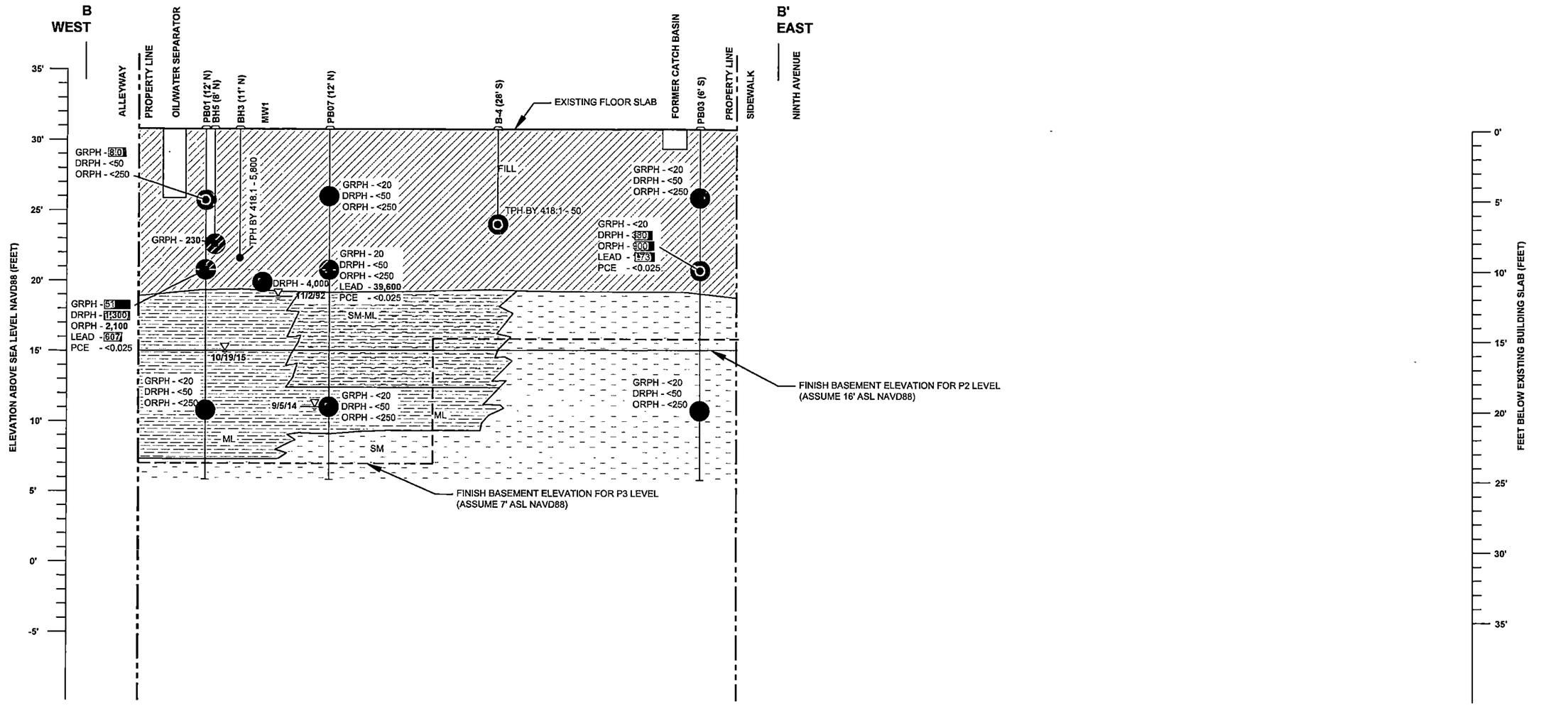
FIGURE 4
GEOLOGIC CROSS SECTION A - A'

P:\1154 BUCA DI BEPPO\1154-001 BUCA DI BEPPO\TECHNICAL\CAD\2015\RI-CAP\1154-001_FIG4.DWG

11/19/2015



LEGEND

SM
SILTY SANDS, SAND - CLAY MIXTURES

ML
INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS

FILL
SILTY SANDS WITH GRAVEL

PROPERTY BOUNDARY

EXCAVATION EXTENTS

● OR ▌ SOIL SAMPLE LOCATION

< RESULT BELOW LABORATORY REPORTING LIMITS

ASL	ABOVE SEA LEVEL
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
MTCA	WASHINGTON STATE MODEL TOXICS CONTROL ACT
GRPH	GASOLINE-RANGE PETROLEUM HYDROCARBONS
DRPH	DIESEL-RANGE PETROLEUM HYDROCARBONS
ORPH	OIL-RANGE PETROLEUM HYDROCARBONS
PCE	TETRACHLOROETHYLENE

MW11 (21' E) WELL OFFSET 21' EAST

BLANK CASING

9/5/14 WATER TABLE

WELL SCREEN INTERVAL

WELL TERMINATION

CONCENTRATIONS IN SOIL

CONCENTRATIONS BELOW LABORATORY REPORTING LIMIT

CONCENTRATIONS AT OR BELOW MTCA METHOD A CLEANUP LEVEL

CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL

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701 9TH AVENUE NORTH
SEATTLE, WASHINGTON
SOUNDEARTH PROJECT #1154-001

FIGURE 5
GEOLOGIC CROSS SECTION B - B'

P:\1154 BUCA DI BEPPO\1154-001 BUCA DI BEPPO\TECHNICAL\CAD\2015\RI-CAP\1154-001_FIG5.DWG

11/19/2015

ALLEY WAY

SUSPECT WASTE OIL UST
(HART CROWSER, 1988)
ENVIROS, 1992)

HEATING FUEL FILL
AND VENT PIPES

OIL/WATER
SEPARATOR

N

0 10 20

APPROXIMATE SCALE IN FEET

FORMER
BOILER ROOM
(BASEMENT)

MW1

ROY STREET

SIDEWALK

ABANDONED 8" SEWER LINE

WALL

GARAGE

FORMER PIT

SUSPECT UST
FILL PORT

FORMER
CATCH BASIN

FORMER
MACHINE SHOP

SIDEWALK

NINTH AVENUE NORTH

B-6

LEGEND

- MW01 — MONITORING WELL (ENVIROS, 1992)
- MW-1 — MONITORING WELL (HART CROWSER, 1988)
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- SS — SEWER LINE
- SV — STORMWATER LINE
- CONSTRUCTION EXCAVATION EXTENT
- PROPOSED REMEDIAL EXCAVATION AREAS
- UST — UNDERGROUND STORAGE TANK
- FORMER HYDRAULIC LIFTS
- ESTIMATED AREA OF SOILS REQUIRING SUBTITLE D LANDFILL (CATEGORY 3, 4) DISPOSAL
- ESTIMATED AREA OF SOIL REQUIRING CATEGORY 2 SOIL DISPOSAL

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701 9TH AVENUE NORTH
SEATTLE, WASHINGTON
SOUNDEARTH PROJECT #1154-001

FIGURE 6
PROPOSED REMEDIAL EXCAVATION
AREA AND SOIL SAMPLING GRID

P:\1154 BUCA DI BEPPO\1154-001 BUCA DI BEPPO\TECHNICAL\CAD\2015\RI-CAP\1154-001_FIG6.DWG

TABLES

SoundEarth Strategies

Table 1
Summary of Soil Analytical Results
Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington

Sample Location	Sample ID	Sampled By	Date Sampled	Depth (feet)	Analytical Results (in milligrams per kilogram)																
					GRPH[1]	DRPH[2]	ORPH[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]	TPH[4]	Vinyl Chloride[5]	cis-1,2-DCE[5]	Trans-1,2-DCE[5]	TCE[5]	PCE[5]	Arsenic[6]	Cadmium[7]	Chromium[8]	Lead[9]	Mercury[10]
B-1	B-1	Hart Crowser	12/07/88	0-10	--	--	--	--	--	--	--	670	--	--	--	--	--	--	--	--	--	--
B-2	B-2	Hart Crowser	12/07/88	0-10	--	--	--	--	--	--	--	1,200	--	--	--	--	--	--	--	--	--	--
B-3	B-3	Hart Crowser	12/07/88	0-10	--	--	--	--	--	--	--	130	--	--	--	--	--	--	--	--	--	--
B-4	B-4	Hart Crowser	12/07/88	0-10	--	--	--	--	--	--	--	50	--	--	--	--	--	--	--	--	--	--
B-5	B-5	Hart Crowser	12/08/88	0-14	--	--	--	--	--	--	--	<1	--	--	--	--	--	--	--	--	--	--
B-6	B-6	Hart Crowser	12/08/88	0-16.5	--	--	--	--	--	--	--	<1	--	--	--	--	--	<0.005	0.03	<0.005	<0.1	<0.0005
MW1	BT-MW1-10-11.5	Enviros	11/02/92	10-11.5	--	4,000	--	--	--	--	--	--	--	<0.096	<0.023	<0.060	<0.060	--	--	--	--	--
SB1	BT-SB1-5-6.5	Enviros	11/01/92	5-6.5	--	--	--	--	--	--	--	94	--	--	--	--	--	--	--	--	--	--
BH1	BH1-8.0'	Enviros	08/01/92	8.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH2	BH2-5.0'	Enviros	08/01/92	5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH3	BH3-9.0'	Enviros	08/01/92	9.0	--	--	--	--	--	--	--	5,800	--	--	--	--	--	--	--	--	--	--
BH4	BH4-8.25'	Enviros	08/01/92	8.25	--	--	--	--	--	--	--	120	--	--	--	--	--	--	--	--	--	--
BH5	BH5-8.5'	Enviros	08/01/92	8.5	230	--	--	<0.08	<0.08	0.088	0.730	420	--	--	--	--	--	--	--	--	--	--
PB01	PB01-05	SoundEarth	09/05/14	05	8.0	<50	<250	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--	--	--
	PB01-10	SoundEarth	09/05/14	10	51	1,300*	2,100	<0.03	<0.05	<0.05	<0.2	--	<0.05	<0.05	<0.05	<0.02	<0.025	4.74	<1	17.7	607	0.60
	PB01-20	SoundEarth	09/05/14	20	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PB02	PB02-10	SoundEarth	09/05/14	10	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	PB02-15	SoundEarth	09/05/14	15	<20	3,100	570	<0.03	<0.05	<0.05	<0.2	--	<0.05	<0.05	<0.05	<0.02	<0.025	5.55	<1	32.3	8.32	<0.1
	PB02-25	SoundEarth	09/05/14	25	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PB03	PB03-05	SoundEarth	09/05/14	5	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	PB03-10	SoundEarth	09/05/14	10	<20	360*	900	<0.03	<0.05	<0.05	<0.2	--	<0.05	<0.05	<0.05	<0.02	<0.025	1.28	<1	10.9	1.73	<0.1
	PB03-20	SoundEarth	09/05/14	20	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PB04	PB04-05	SoundEarth	09/05/14	5	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	PB04-10	SoundEarth	09/05/14	10	<20	<50	<250	<0.03	<0.05	<0.05	<0.2	--	<0.05	<0.05	<0.05	<0.02	<0.025	1.27	<1	13.0	1.91	<0.1
	PB04-20	SoundEarth	09/05/14	20	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PB05	PB05-10	SoundEarth	09/05/14	10	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	PB05-15	SoundEarth	09/05/14	15	<20	<50	<250	<0.03	<0.05	<0.05	<0.2	--	<0.05	<0.05	<0.05	<0.02	<0.025	1.25	<1	10.3	1.67	<0.1
	PB05-25	SoundEarth	09/05/14	25	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PB06	PB06-05	SoundEarth	09/05/14	5	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	PB06-10	SoundEarth	09/05/14	10	<20	<50	<250	<0.03	<0.05	<0.05	<0.2	--	<0.05	<0.05	<0.05	<0.02	<0.025	10.7	<1	34.0	17.0	<0.1
	PB06-20	SoundEarth	09/05/14	20	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PB07	PB07-05	SoundEarth	09/05/14	5	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	PB07-10	SoundEarth	09/05/14	10	<20	<50	<250	<0.03	<0.05	<0.05	<0.2	--	<0.05	<0.05	<0.05	<0.02	<0.025	10.1	1.40	34.0	39,600	20
	PB07-20	SoundEarth	09/05/14	20	<20	<50	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels for Soil[11]					**30/100**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**	**200**	--	--	--	--	--	**20**	**2**	**2,000**	**250**	**2**

NOTES:

Red denotes concentrations exceeding soil cleanup level.

Analyzed by ESN Northwest Chemistry Laboratory, Olympia, Washington and Friedman & Bruya, Inc., Seattle, Washington.

[1]Analyzed by Method NWTPH-Gx or NWTPH-HCID.

[2]Analyzed by Method NWTPH-Dx or NWTPH-HCID.

[3]Analyzed by EPA Method 8021B or 8260.

[4]Analyzed by EPA Method 418.1.

[5]Analyzed by EPA Method 8260C.

[6]Analyzed by EPA Method 7060 or 200.8.

[7]Analyzed by EPA Method 7031 or 200.8.

[8]Analyzed by EPA Method 7190 or 200.8

[9]Analyzed by EPA Method 7420 or 200.8.

[10]Analyzed by EPA Method 7470 or 1631E.

[11]MTCA Cleanup Levels, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

Laboratory Note:

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

< = not detected above the laboratory reporting limit

DCE = dichloroethene

DRPH = diesel-range petroleum hydrocarbons

Enviros = Enviros Incorporated

GRPH = gasoline-range petroleum hydrocarbons

Hart Crowser = Hart Crowser, Inc.

MTCA = Washington State Model Toxics Control Act

NWTPH = Northwest Total Petroleum Hydrocarbon

ORPH = oil-range petroleum hydrocarbons

PCE = tetrachloroethylene

SoundEarth = SoundEarth Strategies, Inc.

TCE = trichloroethylene

TPH = Total Petroleum Hydrocarbons

SoundEarth Strategies

Table 2
Summary of Historical Groundwater Analytical Results
Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington

Sample Location	Sample ID	Sample Date	Analytical Results (µg/L)									
			TPH[1]	DRPH[2]	Benzene[2]	Toluene[2]	Ethyl benzene[2]	Total Xylenes[2]	PCE[2]	TCE[2]	cis-1,2-DCE[2]	Methylene chloride[2]
B-6	B-6/S-1	12/13/88	<500	--	<1	<1	<1	<2	--	--	--	--
	BT-B6-11/92	11/06/92	**920**	--	--	--	--	--	--	--	--	--
MW1	BT-MW1-11/92	11/06/92	--	**810**	--	--	--	--	<1	<1	<1.6	<5
MTCA Cleanup Level			**500[3]**	**500[3]**	**5[3]**	**1,000[3]**	**700[3]**	**1,000[3]**	**5[3]**	**5[3]**	**16[4]**	**5[3]**

NOTES:

Red denotes concentration exceeds MTCA Cleanup Level.

[1]Analyzed by EPA 418.1.

[2]Analyzed by EPA Method 8010.

[3]MTCA Cleanup Regulation, Method A Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the WAC, revised November 2007.

[4]MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Groundwater, Method B, Non-Carcinogen, Standard Formula Value, CLARC Website <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>.

-- = not analyzed
< = not detected at concentrations exceeding the laboratory reporting limit
µg/L = micrograms per liter
CLARC = Cleanup Levels and Risk Calculations
DCE = dichloroethene
DRPH = diesel-range petroleum hydrocarbons
EPA = U.S. Environmental Protection Agency
MTCA = Washington State Model Toxics Control Act
PCE = tetrachloroethylene
TCE = trichloroethylene
TPH = Total Petroleum Hydrocarbons
WAC = Washington Administrative Code

APPENDIX A
HISTORICAL DOCUMENTATION

Appendix A is only available on the attached disk

APPENDIX B
BORING LOGS

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	15.5' South
Well Location E/W:	9.5' East
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB01

Site Address: 701 9th Avenue North
Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
0						Asphalt		**Asphalt at surface.**	
			20			GP		**Moist, sandy GRAVEL with silt, light gray, no hydrocarbon odor (15-35-50).**	
						SM		**Moist, silty SAND with gravel, dark brown, no hydrocarbon odor (15-50-35).**	
				30.2	PB01-05	ML		**Moist, sandy SILT with gravel, brown, moderate hydrocarbon odor (60-20-20).**	
5									
			15						
				201.6	PB01-10	SM		**Moist, silty SAND with gravel, brownish black, strong hydrocarbon odor (20-60-20).**	
10									
			50			ML		**Moist, sandy SILT, gray, moderate to slight hydrocarbon odor (65-35-0).**	
				0.8	PB01-15				
15									

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	**Notes/Comments:**
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	N/S and E/W measurements taken from NW corner of garage.
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	15.5' South
Well Location E/W:	9.5' East
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB01

Site Address: 701 9th Avenue North
Seattle, Washington

Water Depth At Time of Drilling 20 feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
15			55			ML		**Moist, well consolidated, sandy SILT, dark gray, no hydrocarbon odor (60-40-0).**	
20				0.0	PB01-20			**Driller reports water at about 20' bgs.**	▽
			60			ML		**Moist, well consolidated, sandy SILT with clay, no hydrocarbon odor, dark gray (75-25-0).**	
25					PB01-25			**End of boring at 25 feet bgs. Backfilled with bentonite chips to surface grade.**	
30									

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	**Notes/Comments:**
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	N/S and E/W measurements taken from NW corner of garage.
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	6' North
Well Location E/W:	19.5' East
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB02

Site Address: 701 9th Avenue North, Seattle, Washington

Water Depth At Time of Drilling -- feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
0						Asphalt		**Asphalt at surface.**	
			40			GP		**Moist, sandy GRAVEL with silt; light gray, no hydrocarbon odor (10-35-55).**	
5				4.6	PB02-05	SM		**Moist, silty SAND with gravel, brown, no hydrocarbon odor (20-70-10).**	
			40						
				0.0	PB02-10	ML		**Moist, sandy SILT with organic material and glass, brownish red, no hydrocarbon odor (30-65-5). (FILL)**	
10						ML		**Same as above to 12' bgs.**	
			75			ML		**Moist, sandy SILT, gray, no hydrocarbon odor (70-30-0).**	
				1.1	PB02-15				
15									

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	**Notes/Comments:**
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	N/S and E/W measurements taken from SW corner of garage.
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	6' North
Well Location E/W:	19.5' East
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB02

Site Address: 701 9th Avenue North, Seattle, Washington

Water Depth At Time of Drilling -- feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
15			90			SM		**Moist, gravelly SAND with silt, brown, no hydrocarbon odor (15-60-25).**	
						ML		**Moist, sandy SILT, gray, no hydrocarbon odor (70-30-0).**	
20				0.2	PB02-20				
						SM		**Moist, gravelly SAND with silt, brown, no hydrocarbon odor (10-85-15).**	
			80			ML		**Moist, sandy SILT, gray, no hydrocarbon odor (30-40-0).**	
				0.1	PB02-25	SM		**Moist, silty SAND, gray, no hydrocarbon odor (30-70-0).**	
25								**End of boring at 25 feet bgs. Backfilled with bentonite chips to surface grade.**	
30									

						Notes/Comments:
Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	N/S and E/W measurements taken from SW corner of garage.
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	29' South
Well Location E/W:	8.5' West
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB03

Site Address: 701 9th Avenue North, Seattle, Washington

Water Depth At Time of Drilling -- feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
0						Asphalt		**Asphalt at surface.**	
			50			SM		**Moist, silty SAND with gravel, brown, no hydrocarbon odor (25-70-5).**	
5				0.2	PB03-05				
			5					**Driller reports potential void in backfill within sample interval.**	
				0.0	PB03-10	SM		**Moist, silty SAND with gravel, brown, no hydrocarbon odor (25-60-10).**	
10									
			15						
				0.1	PB03-15	SM		**Moist, gravelly SAND with silt, brown, no hydrocarbon odor (10-60-30).**	
15									

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	**Notes/Comments:**
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	N/S and E/W measurements taken from NE corner of garage.
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	29' South
Well Location E/W:	8.5' West
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB03

Site Address: 701 9th Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
15			60			SM		**Moist, silty SAND with gravel, brown, no hydrocarbon odor (15-80-5).**	
				0.2	PB03-20	SM		**Moist, silty SAND with gravel and clay, gray and brown, no hydrocarbon odor (30-60-10).**	
20			40			SM		**Moist, silty SAND with gravel, brown, no hydrocarbon odor (20-75-5).**	
				0.2	PB03-25	SM		**Moist, silty SAND with gravel, gray, no hydrocarbon odor (40-55-5).**	
25								**End of boring at 25 feet bgs. Backfilled with bentonite chips to surface grade.**	
30									

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	**Notes/Comments:**
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	N/S and E/W measurements taken from NE corner of garage.
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	39.5' North
Well Location E/W:	24.5' West
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB04

Site Address: 701 9th Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
0						Asphalt		**Asphalt at surface.**	
			20						
5				0.4	PB04-05	SM		**Moist, silty SAND with gravel, brown, no hydrocarbon odor (25-65-10). (FILL).**	
			15						
10				0.4	PB04-10	SM		**Same as above.**	
			15						
15				0.4	PB04-15	SM		**Moist, silty SAND with gravel, brownish gray, no hydrocarbon odor (30-60-10).**	

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	**Notes/Comments:**
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	N/S and E/W measurements taken from SE corner of garage.
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	39.5' North
Well Location E/W:	24.5' West
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB04

Site Address: 701 9th Avenue North, Seattle, Washington

Water Depth At Time of Drilling -- feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
15			50			SM		Same as above.	
						SM		Moist, silty SAND with gravel, and organic material, black, no hydrocarbon odor (25-65-10).	
						SM		Moist, silty SAND with gravel, gray, no hydrocarbon odor (25-75-5).	
20				0.2	PB04-20				
			40			SM		Same as above.	
				0.1	PB04-25	SM		Moist, silty SAND, gray, no hydrocarbon odor (35-65-0).	
25								End of boring at 25 feet bgs. Backfilled with bentonite chips to surface grade.	
30									

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	**Notes/Comments:**
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	N/S and E/W measurements taken from SE corner of garage.
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	1.5' North
Well Location E/W:	26.5' West
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB05

Site Address: 701 9th Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
0						Asphalt		**Asphalt at surface.**	
			20						
5				10.1	PB05-05	SM		**Crushed concrete.**	
			50			SM		**Moist, silty SAND with gravel, brownish gray, no hydrocarbon odor (15-80-5).**	
						GP		**Moist, sandy GRAVEL with silt, brownish gray, no hydrocarbon odor (15-10-75).**	
						SM		**Moist, silty SAND with gravel, brown, no hydrocarbon odor (25-70-5).**	
10				3.3	PB05-10				
						SM		**Moist, silty SAND with gravel, brownl, no hydrocarbon odor (15-65-20).**	
			90						
						SM		**Moist, silty SAND, brown, no hydrocarbon odor (25-75-0).**	
15				0.2	PB05-15				

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--	
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--	
Total Well Depth:	--	feet bgs	**Annular Seal:**	--	
State Well ID No.:	--		**Monument Type:**	--	

Notes/Comments:
N/S and E/W measurements taken from SE corner of garage.
Boring angled at 30 degrees from vertical.

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	1.5' North
Well Location E/W:	26.5' West
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB05

Site Address: 701 9th Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
15			50					**Driller reports sluff in sampler due to angled boring and soft materiall.**	
						SM		**Moist, silty SAND with gravel, dark gray, no hydrocarbon odor (20-70-10).**	
				0.8	PB05-20				
20									
						SM		**Moist, well consolidated, silty SAND with gravel, gray, no hydrocarbon odor (25-70-5).**	
			100						
				0.4	PB05-25				
25								**End of boring at 25 feet bgs. Backfilled with bentonite chips to surface grade.**	
30									

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	**Notes/Comments:**
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	N/S and E/W measurements taken from SE corner of garage.
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	Boring angled at 30 degrees from vertical.
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	48.5' North
Well Location E/W:	51' West
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB06

Site Address: 701 9th Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
0						Asphalt		**Asphalt at surface.**	
						Concrete		**Crushed concrete.**	
			50			ML		**Moist, sandy SILT with gravel, brown, no hydrocarbon odor (60-35-5).**	
5				0.5	PB06-05				
			50			GP		**2" layer of Moist, sandy GRAVEL, with silt, light gray, no hydrocarbon odor (10-15-75).**	
						SM		**Moist, silty SAND with gravel, red and black, no hydrocarbon odor (20-70-10).**	
						ML		**Moist, sandy SILT with gravel, brown, no hydrocarbon odor (60-35-5).**	
10				0.5	PB06-10				
			50			ML		**Moist, sandy SILT, mottled brown and orange, no hydrocarbon odor (70-20-0).**	
15				0.5	PB06-15	ML		**Moist, sandy SILT, gray, no hydrocarbon odor (70-30-0).**	

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	**Notes/Comments:**
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	N/S and E/W measurements taken from SE corner of garage.
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	48.5' North
Well Location E/W:	51' West
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB06

Site Address: 701 9th Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
15									
			50						
				0.3	PB06-20	SM		**Moist, silty SAND with gravel, gray, no hydrocarbon odor (20-70-10).**	
20									
			45						
				0.4	PB06-25	SM		**Moist, silty coarser SAND, gray, no hydrocarbon odor (25-75-0).**	
25								**End of boring at 25 feet bgs. Backfilled with bentonite chips to surface grade.**	
30									

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	**Notes/Comments:**
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	N/S and E/W measurements taken from SE corner of garage.
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	14.5' South
Well Location E/W:	35' East
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB07

Site Address: 701 9th Avenue North, Seattle, Washington

Water Depth At Time of Drilling -- feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
0						Asphalt		**Asphalt at surface.**	
						Concrete		**Crushed concrete.**	
			50			SM		**Moist, silty SAND with gravel, gray, no hydrocarbon odor (20-70-10).**	
5				0.5	PB07-05	ML		**Moist, sandy SILT, mottled gray and orange, no hydrocarbon odor (65-35-0).**	
			50			SM		**Moist, silty SAND with glass and organics, black. gray. and red, no hydrocarbon odor (30-65-5).**	
10				0.7	PB07-10				
						SM		**Same as above.**	
			55			SM-ML		**Moist, silty SAND to sandy SILT, gray, no hydrocarbon odor (40-60-0) to (70-30-0).**	
15				0.5	PB07-15				

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	**Notes/Comments:**
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	N/S and E/W measurements taken from NW corner of garage.
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

SoundEarth Strategies

Project:	Buca di Beppo/Ducati
Project Number:	0996-007
Logged by:	CMP
Date Started:	9/5/2014
Surface Conditions:	Asphalt
Well Location N/S:	14.5' South
Well Location E/W:	35' East
Reviewed by:	CCC
Date Completed:	9/5/2014

BORING LOG | PB07

Site Address: 701 9th Avenue North
Seattle, Washington

Water Depth At Time of Drilling -- feet bgs

Water Depth After Completion -- feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Detail/ Water Depth
15			60			SM-ML		Same as above.	
				0.4	PB07-20	ML		Moist, sandy SILT, gray, no hydrocarbon odor (80-20-0).	
20			40			SM		Moist, silty SAND, gray, no hydrocarbon odor (35-65-0).	
				0.4	PB07-25				
25								End of boring at 25 feet bgs. Backfilled with bentonite chips to surface grade.	
30									

Drilling Co./Driller:	Holt/Louie		**Well/Auger Diameter:**	--	inches	**Notes/Comments:**
Drilling Equipment:	Pushprobe		**Well Screened Interval:**	--	feet bgs	N/S and E/W measurements taken from NW corner of garage.
Sampler Type:	Continuous		**Screen Slot Size:**	--	inches	
Hammer Type/Weight:	--	lbs	**Filter Pack Used:**	--		
Total Boring Depth:	25	feet bgs	**Surface Seal:**	--		
Total Well Depth:	--	feet bgs	**Annular Seal:**	--		
State Well ID No.:	--		**Monument Type:**	--		

APPENDIX C
LABORATORY ANALYTICAL REPORT

Friedman & Bruya, Inc. #409079

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

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September 11, 2014

Chuck Cacek, Project Manager
SoundEarth Strategies
2811 Fairview Ave. East, Suite 2000
Seattle, WA 98102

Dear Mr. Cacek:

Included are the results from the testing of material submitted on September 5, 2014 from the SOU_0996_20140905, F&BI 409079 project. There are 30 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
SOU0911R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 5, 2014 by Friedman & Bruya, Inc. from the SoundEarth Strategies SOU_0996_20140905, F&BI 409079 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SoundEarth Strategies
409079 -01	PB01-05
409079 -02	PB01-10
409079 -03	PB01-15
409079 -04	PB01-20
409079 -05	PB01-25
409079 -06	PB02-05
409079 -07	PB02-10
409079 -08	PB02-15
409079 -09	PB02-20
409079 -10	PB02-25
409079 -11	PB03-05
409079 -12	PB03-10
409079 -13	PB03-15
409079 -14	PB03-20
409079 -15	PB03-25
409079 -16	PB04-05
409079 -17	PB04-10
409079 -18	PB04-15
409079 -19	PB04-20
409079 -20	PB04-25
409079 -21	PB05-05
409079 -22	PB05-10
409079 -23	PB05-15
409079 -24	PB05-20
409079 -25	PB05-25
409079 -26	PB06-05
409079 -27	PB06-10
409079 -28	PB06-15
409079 -29	PB06-20
409079 -30	PB06-25
409079 -31	PB07-05
409079 -32	PB07-10
409079 -33	PB07-15
409079 -34	PB07-20
409079 -35	PB07-25

All quality control requirements were acceptable.

Date of Report: 09/11/14
Date Received: 09/05/14
Project: SOU_0996_20140905, F&BI 409079
Date Extracted: 09/08/14
Date Analyzed: 09/08/14

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 56-165)
PB01-05 409079-01	D	ND	ND	89
PB01-10 409079-02	D	ND	D	83
PB01-20 409079-04	ND	ND	ND	94
PB02-10 409079-07	ND	ND	ND	92
PB02-15 409079-08	ND	D	ND	89
PB02-25 409079-10	ND	ND	ND	96
PB03-05 409079-11	ND	ND	ND	95
PB03-10 409079-12	ND	ND	D	103
PB03-20 409079-14	ND	ND	ND	96
PB04-05 409079-16	ND	ND	ND	97
PB04-10 409079-17	ND	ND	ND	91
PB04-20 409079-19	ND	ND	ND	91

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 09/11/14
Date Received: 09/05/14
Project: SOU_0996_20140905, F&BI 409079
Date Extracted: 09/08/14
Date Analyzed: 09/08/14

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 56-165)
PB05-10 409079-22	ND	ND	ND	97
PB05-15 409079-23	ND	ND	ND	98
PB05-25 409079-25	ND	ND	ND	96
PB06-05 409079-26	ND	ND	ND	98
PB06-10 409079-27	ND	ND	ND	101
PB06-20 409079-29	ND	ND	ND	99
PB07-05 409079-31	ND	ND	ND	97
PB07-10 409079-32	ND	ND	ND	97
PB07-20 409079-34	ND	ND	ND	97
Method Blank 04-1807 MB	ND	ND	ND	84
Method Blank 04-1808 MB	ND	ND	ND	101

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 09/11/14
Date Received: 09/05/14
Project: SOU_0996_20140905, F&BI 409079
Date Extracted: 09/09/14
Date Analyzed: 09/09/14

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
PB01-10 409079-02	51	107
Method Blank 04-1793 MB	<2	100

Date of Report: 09/11/14
Date Received: 09/05/14
Project: SOU_0996_20140905, F&BI 409079
Date Extracted: 09/09/14
Date Analyzed: 09/09/14

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
PB01-05 409079-01	<0.02	<0.02	<0.02	<0.06	8.0	97
Method Blank 04-1793 MB	<0.02	<0.02	<0.02	<0.06	<2	93

Date of Report: 09/11/14
Date Received: 09/05/14
Project: SOU_0996_20140905, F&BI 409079
Date Extracted: 09/09/14
Date Analyzed: 09/09/14

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
PB01-10 409079-02	1,300 x	2,100	99
PB02-15 409079-08	3,100	570	101
PB03-10 409079-12	360 x	900	100
Method Blank 04-1830 MB	<50	<250	116

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	PB01-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-02
Date Analyzed:	09/10/14	Data File:	409079-02.023
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	122	60	125
Indium	100	60	125
Holmium	100	60	125

Analyte:	Concentration mg/kg (ppm)
Chromium	17.7
Arsenic	4.74
Cadmium	<1
Lead	607

Analysis For Total Metals By EPA Method 200.8

Client ID:	PB02-15	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-08
Date Analyzed:	09/10/14	Data File:	409079-08.024
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	124	60	125
Indium	96	60	125
Holmium	98	60	125

Analyte:	Concentration mg/kg (ppm)
Chromium	32.3
Arsenic	5.55
Cadmium	<1
Lead	8.32

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	PB03-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-12
Date Analyzed:	09/10/14	Data File:	409079-12.025
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	113	60	125
Indium	96	60	125
Holmium	100	60	125

Analyte:	Concentration mg/kg (ppm)
Chromium	10.9
Arsenic	1.28
Cadmium	<1
Lead	1.73

Analysis For Total Metals By EPA Method 200.8

Client ID:	PB04-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-17
Date Analyzed:	09/10/14	Data File:	409079-17.019
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	113	60	125
Indium	100	60	125
Holmium	102	60	125

Analyte:	Concentration mg/kg (ppm)
Chromium	13.0
Arsenic	1.27
Cadmium	<1
Lead	1.91

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	PB05-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-22
Date Analyzed:	09/10/14	Data File:	409079-22.026
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	113	60	125
Indium	96	60	125
Holmium	97	60	125

Analyte:	Concentration mg/kg (ppm)
Chromium	10.3
Arsenic	1.25
Cadmium	<1
Lead	1.67

Analysis For Total Metals By EPA Method 200.8

Client ID:	PB06-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-27
Date Analyzed:	09/10/14	Data File:	409079-27.027
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	121	60	125
Indium	90	60	125
Holmium	91	60	125

Analyte:	Concentration mg/kg (ppm)
Chromium	34.0
Arsenic	10.7
Cadmium	<1
Lead	17.0

Analysis For Total Metals By EPA Method 200.8

Client ID:	PB07-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-32
Date Analyzed:	09/10/14	Data File:	409079-32.029
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	116	60	125
Indium	82	60	125
Holmium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Cadmium	1.40

Analysis For Total Metals By EPA Method 200.8

Client ID:	PB07-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-32 x10
Date Analyzed:	09/10/14	Data File:	409079-32 x10.047
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	97	60	125
Indium	87	60	125
Holmium	96	60	125

Analyte:	Concentration mg/kg (ppm)
Chromium	34.0
Arsenic	10.1
Cadmium	<10
Lead	39,600

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SoundEarth Strategies
Date Received:	NA	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	I4-551 mb
Date Analyzed:	09/10/14	Data File:	I4-551 mb.015
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm) Dry Weight	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	102	60	125
Indium	101	60	125
Holmium	101	60	125

Analyte:	Concentration mg/kg (ppm)
Chromium	<1
Arsenic	<1
Cadmium	<1
Lead	<1

Date of Report: 09/11/14
Date Received: 09/05/14
Project: SOU_0996_20140905, F&BI 409079
Date Extracted: 09/09/14
Date Analyzed: 09/09/14

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
PB01-10 409079-02	0.60
PB02-15 409079-08	<0.1
PB03-10 409079-12	<0.1
PB04-10 409079-17	<0.1
PB05-10 409079-22	<0.1
PB06-10 409079-27	<0.1
PB07-10 409079-32 1/50	20
Method Blank	<0.1

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ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	PB01-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-02
Date Analyzed:	09/09/14	Data File:	090919.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	142
Toluene-d8	99	51	121
4-Bromofluorobenzene	99	32	146

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	PB02-15	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-08
Date Analyzed:	09/09/14	Data File:	090920.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	102	51	121
4-Bromofluorobenzene	99	32	146

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	PB03-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-12
Date Analyzed:	09/09/14	Data File:	090921.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	100	51	121
4-Bromofluorobenzene	98	32	146

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	PB04-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-17
Date Analyzed:	09/09/14	Data File:	090922.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	142
Toluene-d8	102	51	121
4-Bromofluorobenzene	99	32	146

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	PB05-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-22
Date Analyzed:	09/09/14	Data File:	090923.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	101	51	121
4-Bromofluorobenzene	99	32	146

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	PB06-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-27
Date Analyzed:	09/09/14	Data File:	090924.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	102	51	121
4-Bromofluorobenzene	98	32	146

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	PB07-10	Client:	SoundEarth Strategies
Date Received:	09/05/14	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	409079-32
Date Analyzed:	09/09/14	Data File:	090925.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	142
Toluene-d8	102	51	121
4-Bromofluorobenzene	99	32	146

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SoundEarth Strategies
Date Received:	Not Applicable	Project:	SOU_0996_20140905, F&BI 409079
Date Extracted:	09/09/14	Lab ID:	04-1816 mb
Date Analyzed:	09/09/14	Data File:	090908.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	101	51	121
4-Bromofluorobenzene	98	32	146

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Date of Report: 09/11/14
Date Received: 09/05/14
Project: SOU_0996_20140905, F&BI 409079

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 409129-04 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	84	69-120
Toluene	mg/kg (ppm)	0.5	88	70-117
Ethylbenzene	mg/kg (ppm)	0.5	89	65-123
Xylenes	mg/kg (ppm)	1.5	87	66-120
Gasoline	mg/kg (ppm)	20	95	71-131

Date of Report: 09/11/14
Date Received: 09/05/14
Project: SOU_0996_20140905, F&BI 409079

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 409079-12 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	810	90	101	63-146	12

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	98	79-144

Date of Report: 09/11/14
Date Received: 09/05/14
Project: SOU_0996_20140905, F&BI 409079

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 409079-17 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Chromium	mg/kg (ppm)	50	11.7	96 b	91 b	57-128	5 b
Arsenic	mg/kg (ppm)	10	1.14	102	96	70-118	6
Cadmium	mg/kg (ppm)	10	<1	105	100	83-116	5
Lead	mg/kg (ppm)	50	1.72	103	100	59-148	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chromium	mg/kg (ppm)	50	96	78-121
Arsenic	mg/kg (ppm)	10	101	83-113
Cadmium	mg/kg (ppm)	10	104	54-114
Lead	mg/kg (ppm)	50	100	80-120

Date of Report: 09/11/14
Date Received: 09/05/14
Project: SOU_0996_20140905, F&BI 409079

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 409079-17 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	<0.1	101	102	71-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	89	75-117

Date of Report: 09/11/14
Date Received: 09/05/14
Project: SOU_0996_20140905, F&BI 409079

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 409109-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	58	56	10-138	4
Chloroethane	mg/kg (ppm)	2.5	<0.5	78	72	10-176	8
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	76	74	10-160	3
Methylene chloride	mg/kg (ppm)	2.5	<0.5	82	78	10-156	5
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	84	83	14-137	1
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	87	87	19-140	0
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	90	89	25-135	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	93	93	12-160	0
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	92	92	10-156	0
Benzene	mg/kg (ppm)	2.5	<0.03	88	87	29-129	1
Trichloroethene	mg/kg (ppm)	2.5	<0.02	89	88	21-139	1
Toluene	mg/kg (ppm)	2.5	<0.05	88	87	35-130	1
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	88	90	20-133	2
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	89	89	32-137	0
m,p-Xylene	mg/kg (ppm)	5	<0.1	89	91	34-136	2
o-Xylene	mg/kg (ppm)	2.5	<0.05	91	91	33-134	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2.5	74	22-139
Chloroethane	mg/kg (ppm)	2.5	88	10-163
1,1-Dichloroethene	mg/kg (ppm)	2.5	87	47-128
Methylene chloride	mg/kg (ppm)	2.5	86	42-132
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	92	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	93	68-115
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	96	72-113
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	96	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	99	62-131
Benzene	mg/kg (ppm)	2.5	91	68-114
Trichloroethene	mg/kg (ppm)	2.5	94	64-117
Toluene	mg/kg (ppm)	2.5	91	66-126
Tetrachloroethene	mg/kg (ppm)	2.5	94	72-114
Ethylbenzene	mg/kg (ppm)	2.5	91	64-123
m,p-Xylene	mg/kg (ppm)	5	93	78-122
o-Xylene	mg/kg (ppm)	2.5	94	77-124

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

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

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

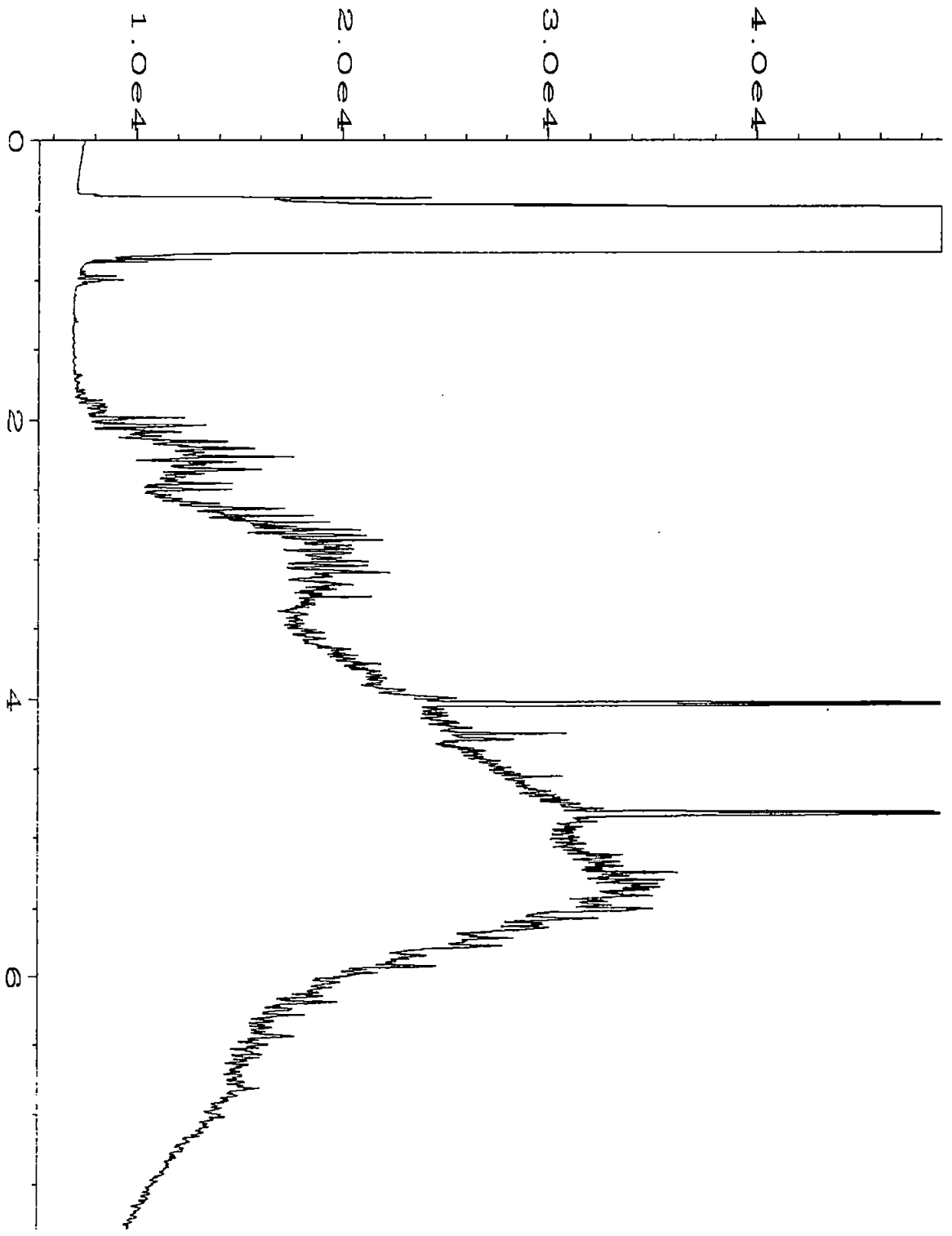
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



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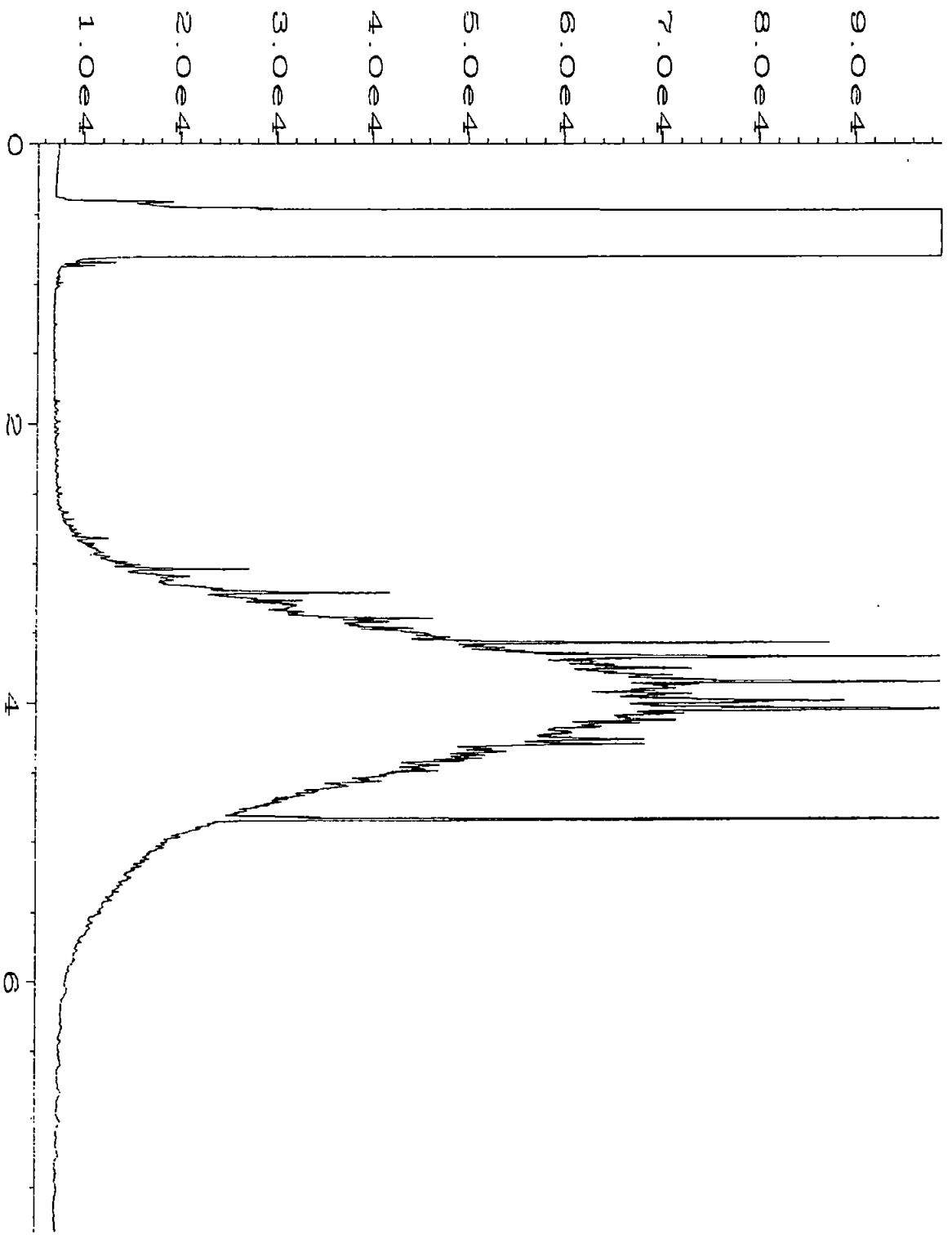
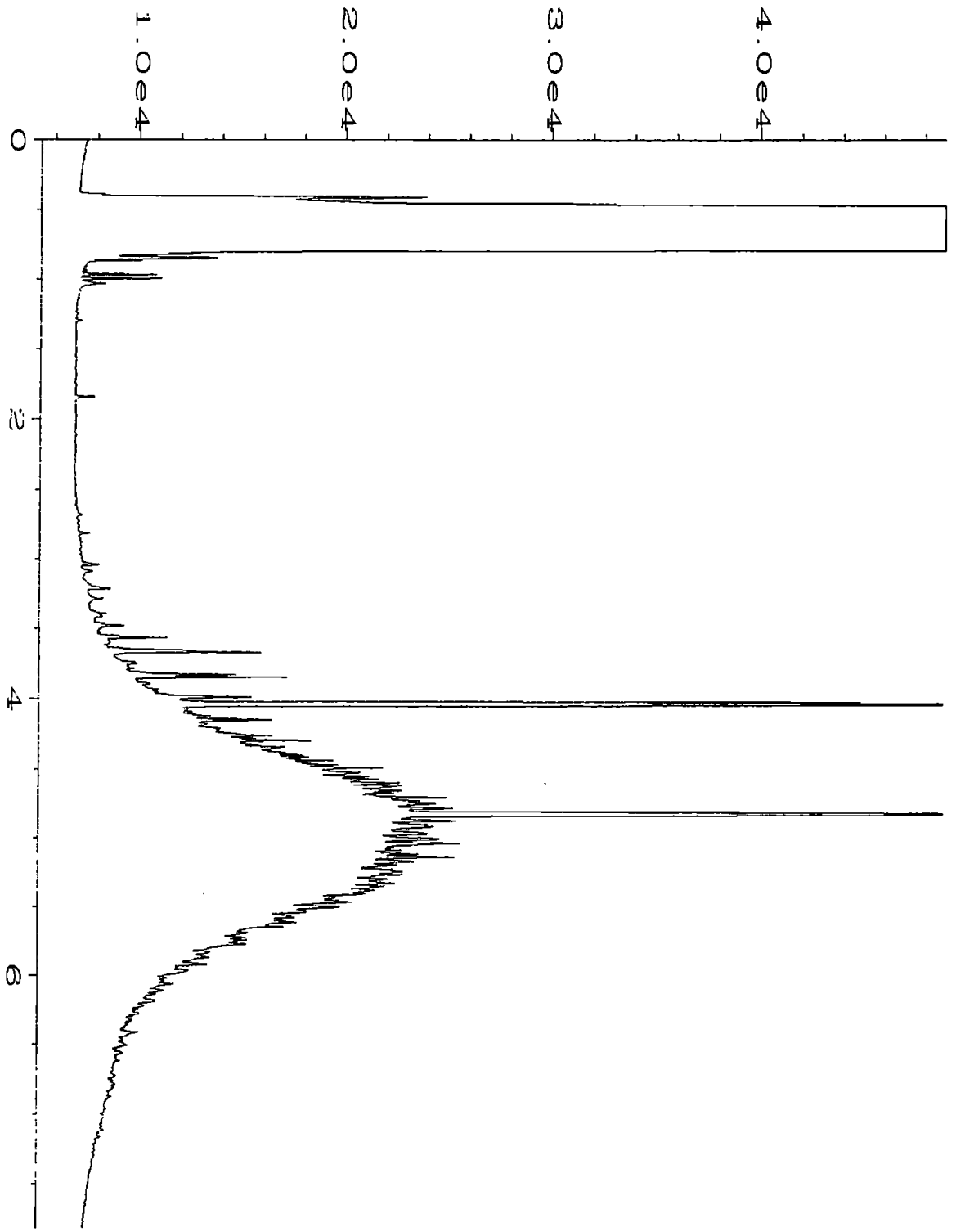
Operator : mwdl
Instrument : GC1
Sample Name : 409079-02
Run Time Bar Code:
Acquired on : 09 Sep 14 04:30 PM
Report Created on: 10 Sep 14 08:31 AM

Page Number : 1
Vial Number : 32
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DX.MTH



Data File Name	: C:\HPCHEM\1\DATA\09-09-14\033F0501.D		
Operator	: mwdl	Page Number	: 1
Instrument	: GC1	Vial Number	: 33
Sample Name	: 409079-08	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 09 Sep 14 04:43 PM	Instrument Method	: DX.MTH
Report Created on	: 10 Sep 14 08:31 AM	Analysis Method	: DX.MTH



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Sample Name	: 409079-12	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
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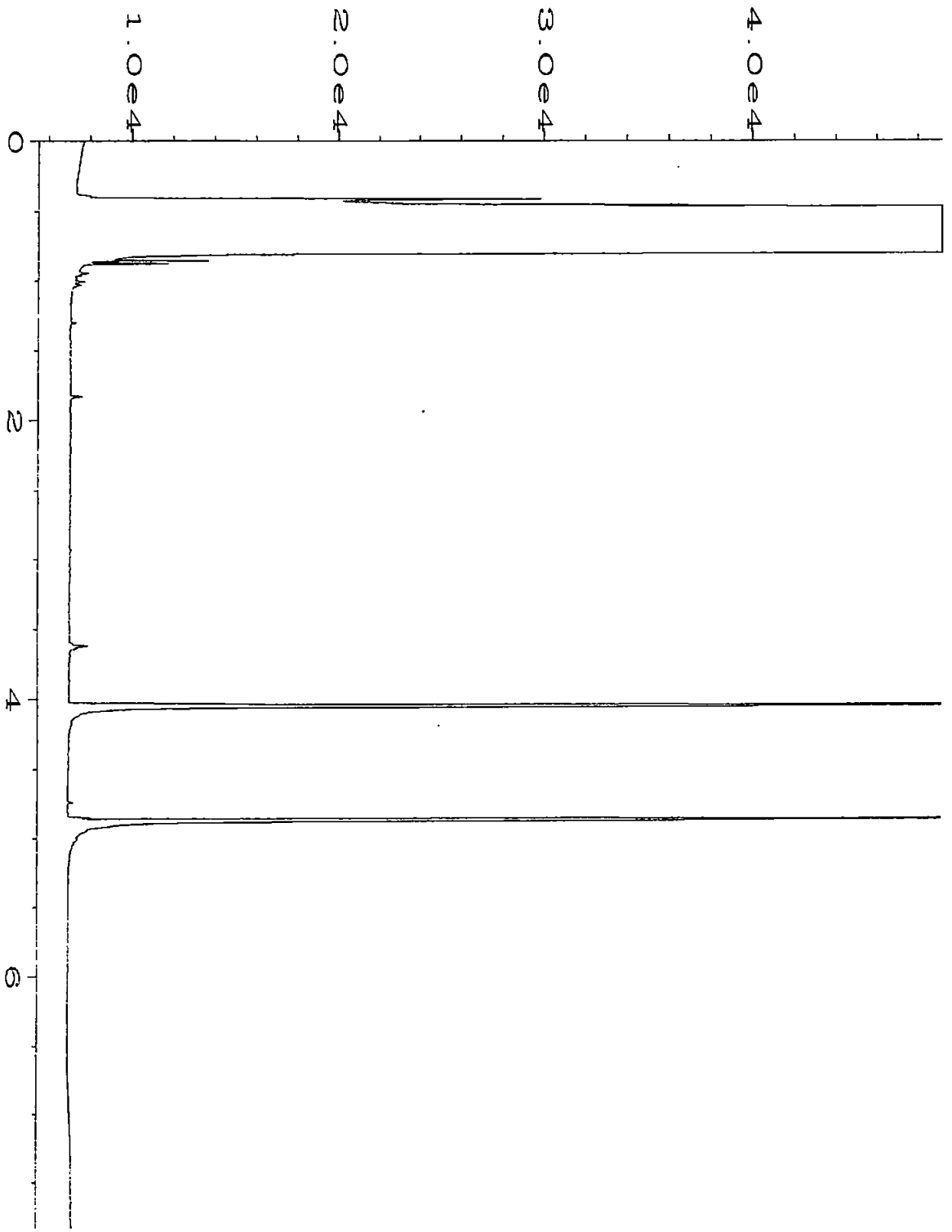
Report Created on	: 10 Sep 14 08:31 AM	Analysis Method	: DX.MTH



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Instrument	: GC1	Vial Number	: 28
Sample Name	: 04-1830 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
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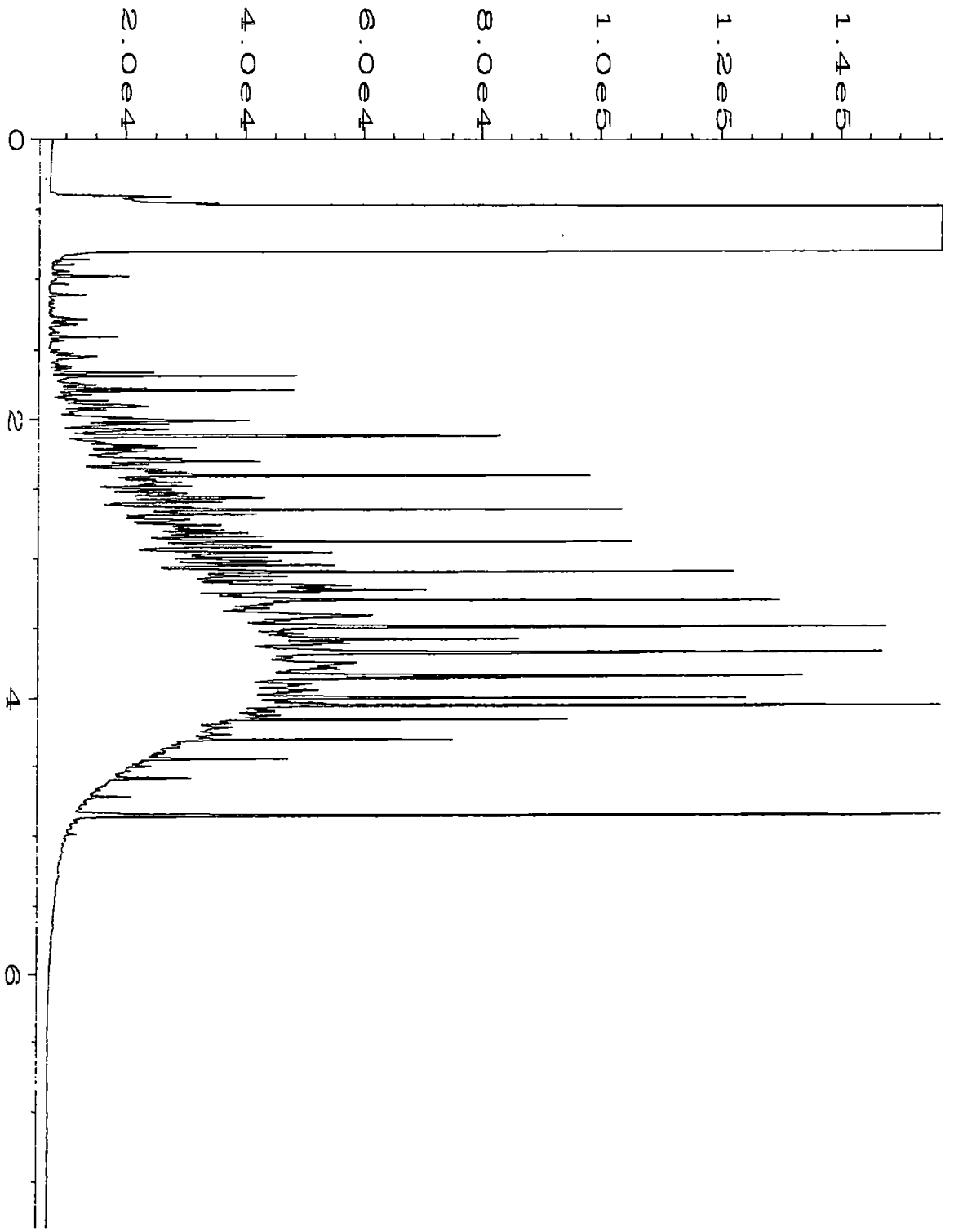
Report Created on	: 10 Sep 14 08:43 AM	Analysis Method	: DX.MTH



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Operator : mwdl
Instrument : GC1
Sample Name : 500 Dx 42-27B
Run Time Bar Code:
Acquired on : 09 Sep 14 08:48 AM
Report Created on: 10 Sep 14 08:43 AM

Page Number : 1
Vial Number : 3
Injection Number : 1
Sequence Line : 2
Instrument Method: DX.MTH
Analysis Method : DX.MTH

409079

SAMPLE CHAIN OF CUSTODY

ME 09/05/14 VSH/BDH

Send Report to Charles Cacek

Company SoundEarth Strategies, Inc.

Address 2811 Fairview Avenue E, Suite 2000

City, State, ZIP Seattle, Washington 98102

Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS (signature)

PROJECT NAME/NO. 0996

PO #

REMARKS ~~HOLD~~

Page # 1 of 4

TURNAROUND TIME
Standard (2 Weeks)
RUSH 24hour TAT
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX by 8021B	CVOCs by 8260 + BTEX	~~SVOCs by 8270~~ MTCA 5 Metals	NWTPH-HCID			Notes
PB01-05	PB01	5	01A-E	9/5/14	0815	Soil	5		X	X			X			X- per CC
PB01-10		10	02		0820			X	X		X	X	X			9/5/14
PB01-15		15	03		0825											MG
PB01-20		20	04		0830								X			
PB01-25		25	05		0835											
PB02-05	PB02	5	06		0900											
PB02-10		10	07		0905								X			
PB02-15		15	08A-D		0910			X			X	X	X			
PB02-20		20	09A-E		0915											
PB02-25		25	10		0920								X			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Courtney Reiter	SoundEarth	9/5/14	1750
Received by:	Nhan Phan	FedEx	9/5/14	1450
Relinquished by:				
Received by:		Samples received at: 5		°C

409079

SAMPLE CHAIN OF CUSTODY ME 09/05/14

CBY/BIY

Page # 2 of 4

Send Report to Charles Cacek

Company SoundEarth Strategies, Inc.

Address 2811 Fairview Avenue E, Suite 2000

City, State, ZIP Seattle, Washington 98102

Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS (signature)

PROJECT NAME/NO. 0996

PO #

REMARKS ~~Bill To~~

TURNAROUND TIME
Standard (2 Weeks)
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX by 8021B	CVOCs by 8260	~~SVOCs by 8270~~ MTCA 5 Metals	NWTPH-HCID			Notes
PB03-05	PB03	5	11 A-E	9/5/14	1000	Soil	5						X			
PB03 10		10	12		1005			X			X	X	X			
PB03 15		15	13		1010											
PB03 20		20	14		1015								X			
PB03 25		25	15		1020											
PB04-05	PB04	5	16		0950								X			
PB04-10		10	17		1055						X	X	X			
PB04-15		15	18		1100											
PB04-20		20	19		1105								X			
PB04-25		25	20		1110											

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Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Courtney Porter	SoundEarth	9/5/14	1450
Received by:		Nhan Pham	FEBI	9/5/14	1452
Relinquished by:					
Received by:			Samples received at 5 °C		

409079

SAMPLE CHAIN OF CUSTODY

MC 09-05-14 USY/BTY

Page # 3 of 4

Send Report to Charles Cacek

Company SoundEarth Strategies, Inc.

Address 2811 Fairview Avenue E, Suite 2000

City, State, ZIP Seattle, Washington 98102

Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS (signature)

PROJECT NAME/NO. 0996

PO #

REMARKS ~~HOLD~~

TURNAROUND TIME
Standard (2 Weeks)
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX by 8021B	cVOCs by 8260 + BTEX	SVOCs by 8270 MTCA 5 Metals	NWTPH-HCID			Notes
PB05-05	PB05	5	21	9/5/14	1135	Soil	5									
PB05-10		10	22		1140						X	X	X			
PB05-15		15	23		1145								X			
PB05-20		20	24		1150											
PB05-25		25	25		1155								X			
PB06-05	PB06	5	26		1245								X			
PB06-10		10	27		1250						X	X	X			
PB06-15		15	28		1255											
PB06-20		20	29		1300								X			
PB06-25		25	30		1305											

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Courtney Porter	SoundEarth	9/5/14	1455
Received by:	Khan Pham	FEDEX	9/5/14	1457
Relinquished by:				
Received by:		Samples received at 5 °C		

409079

SAMPLE CHAIN OF CUSTODY

HE 09-05-14 VS4/BEM

Send Report to Charles Cacek

Company SoundEarth Strategies, Inc.

Address 2811 Fairview Avenue E, Suite 2000

City, State, ZIP Seattle, Washington 98102

Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS (signature)

PROJECT NAME/NO. 0996

PO #

REMARKS ~~HOLD~~

TURNAROUND TIME
Standard (2 Weeks)
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX by 8021B	CVOCs by 8260 + BTEX	SVOCs by 8270 MTCA 5 Met-Is	NWTPH-HCID			Notes
PB07-05	PB07	5	31 A-E	9/5/14	1340	Soil	5						X			
PB07-10		10	32		1345						X	X	X			
PB07-15		15	33		1350											
PB07-20		20	34		1355								X			
PB07-25		25	35		1400											
						GW		9/5/14								

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Courtney Porter	SoundEarth	9/5/14	1750
Received by:	Nhan Phan	FedEx	9/6/14	1450
Relinquished by:				
Received by:		Samples received at 5 °C		

APPENDIX D

PREVIOUS PROPERTY REPORTS

Prepared for:

SEATTLE COMMONS

Site Location:

701 9th Avenue
Seattle Washington

PHASE 2 FINAL REPORT

Groundwater and Subsurface Soil Investigation at Bayside Toyota Seattle, Washington

December 22, 1992 ***920803.01***

1.0 INTRODUCTION

On behalf of Seattle Commons and Mr. Kenney of Bellevue Mazda, Enviros, Inc. (Enviros) conducted a Limited Environmental Site Assessment of the Bayside Toyota property located at 701 9th Avenue in Seattle, Washington (refer to Figure 1 for Vicinity Map). The primary objective of the assessment was to further delineate the nature and extent of petroleum hydrocarbon contamination at the site.

1.1 Site Description

The subject site is located in the SE 1/4 of the NE 1/4 of the SE 1/4 of Township 25 North, Range 4 East, Section 30, King County, Seattle, Washington, approximately 0.5-mile west of Interstate-5 at 701 9th Avenue. The site is located approximately 500 feet west of Lake Union, and is surrounded by an industrial/commercial area. Adjoining Bayside Toyota directly to the north is the former location of Bayside Jeep Isuzu, which extends to the end of the block. Across the alley and to the west, the Seattle Department of Parks and Recreation occupies a large building. Across the street and to the east, an electronic equipment warehouse is located. On the south side of Roy Street, another car dealership currently operates.

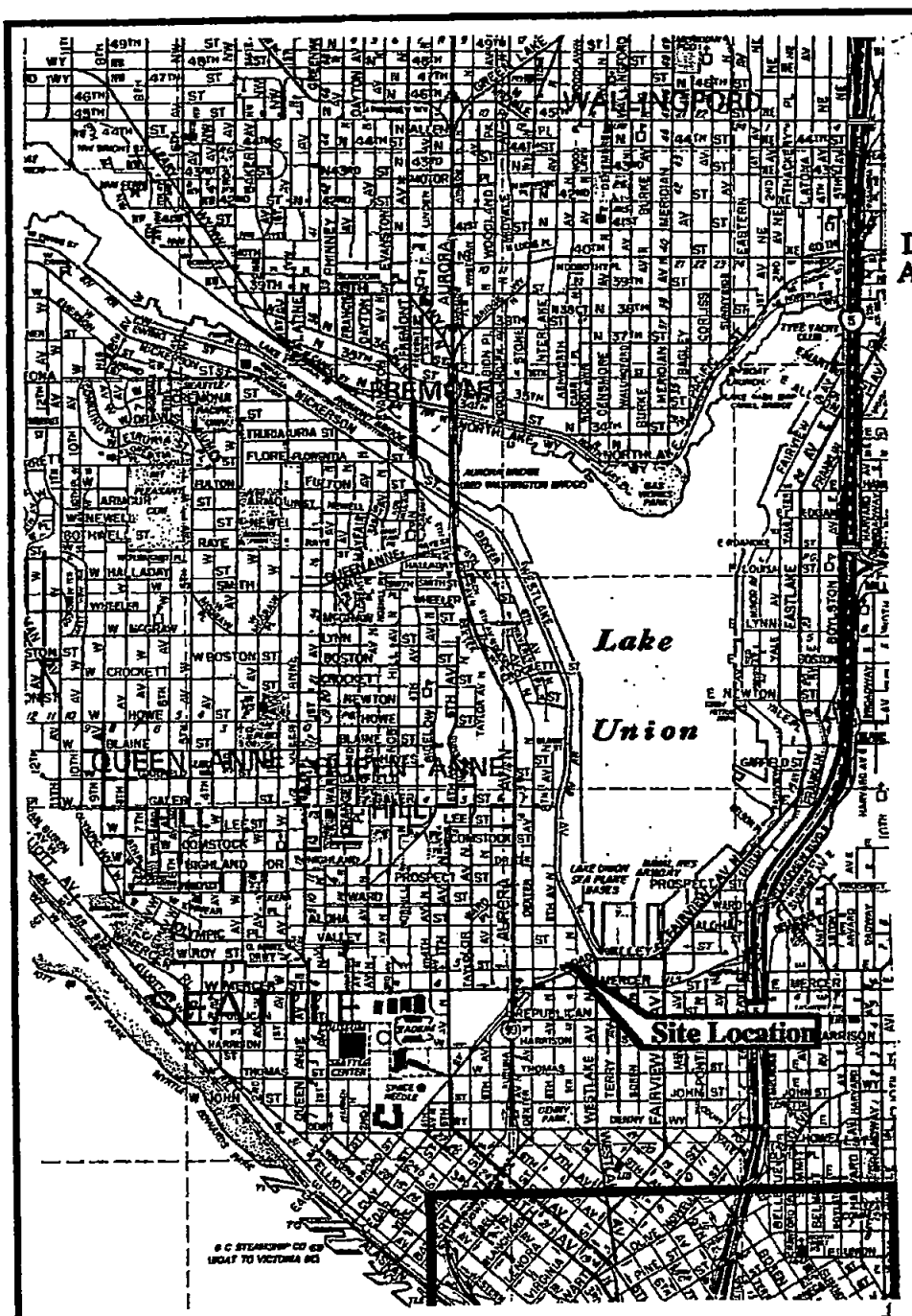
The property consists of a large warehouse building currently being leased and operated by Seattle Motorsport, a car dealership. The building contains a car showroom, automobile repair area, a downstairs boiler room, and several smaller empty rooms. The car showroom and the automobile repair area are used by Seattle Motorsport for automobile display and parking. The northern portion of the automobile repair area is subleased to Royalty Detail.

The automobile repair center area contains one 2,000-gallon underground storage tank (UST), partially visible in the sub-basement, reportedly used to contain heating oil and waste oil. Also present within this area are thirteen hydraulic lifts, a waste oil sump in the northwestern corner of the building, and a former grease pit area in the eastern section (see Figure 2 for locations of site features). The grease pit area was reportedly used for servicing large vehicles at some point in the past.

The floor of the automobile repair area consists of a 6-inch thick concrete pavement. The western half of the building has a second 6-inch layer of concrete beneath the first, with approximately 8 inches of soil in between.

1.2 Previous Work

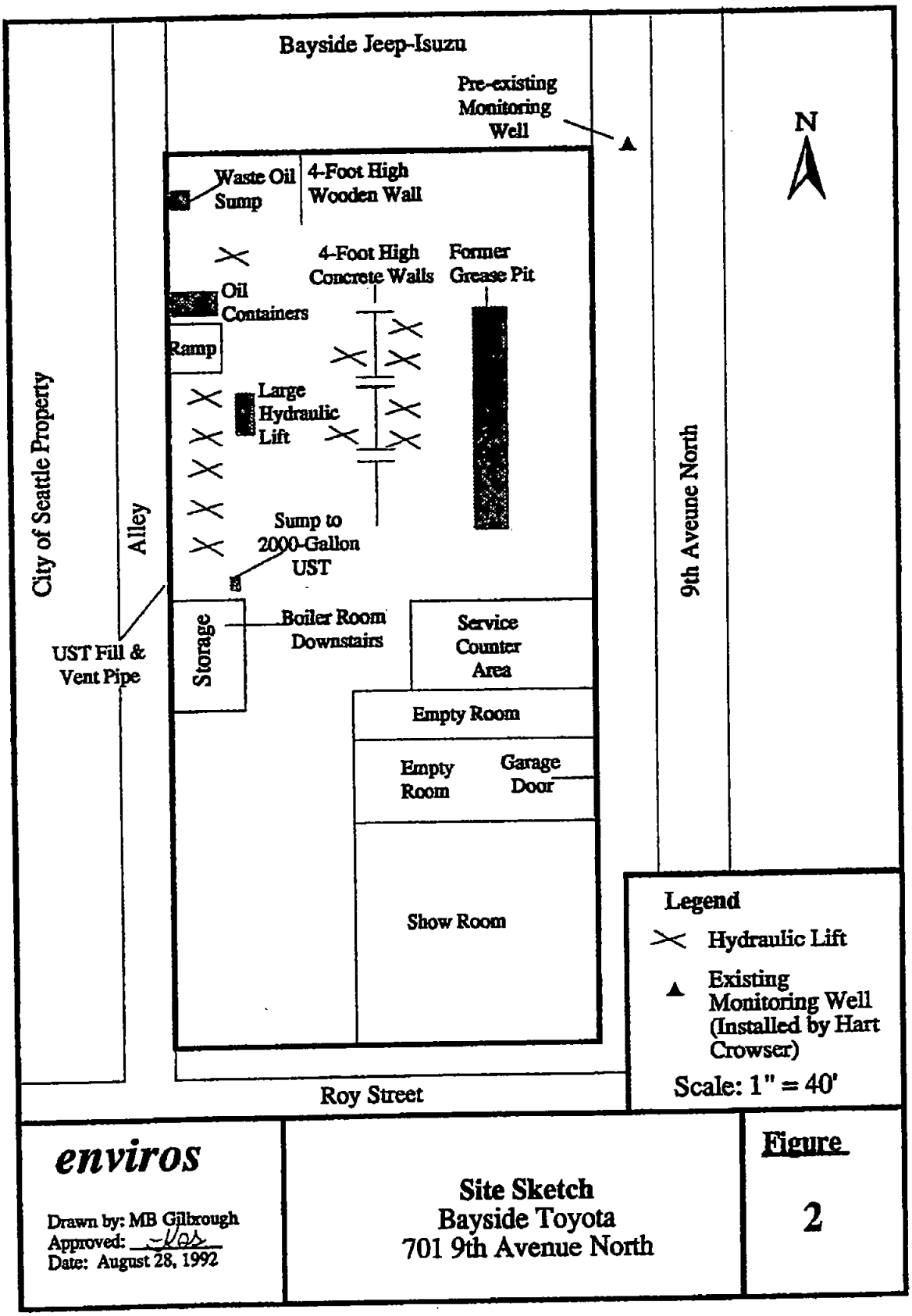
In December 1988, an environmental audit of the property was conducted by Hart Crowser for BJL, Ltd, a former owner of the property. Four hand auger borings and two hollow-stem auger borings were installed (according to the Hart Crowser Preliminary Environmental Assessment report dated December 30, 1988). One of the soil borings was converted into a monitoring well. The well (B-6), located on the northeast corner of the property, is 15 feet deep, and the depth to the uppermost groundwater zone reached by the well is approximately 12 feet below grade. The surface groundwater gradient at the site likely parallels the surface topography and flows in a northeasterly to easterly direction toward Lake Union, 500 feet to the east of the site. A more



Reference Map: The Thomas Guide

enviros Drawn by: MBG, RAS Approved: KSS Date: November 20, 1992	**Vicinity Map** **Bayside Toyota** **701 9th Avenue North**	**Figure** **1**

920803.02



enviros

Drawn by: MB Gilbrough
Approved: _____
Date: August 28, 1992

Site Sketch
Bayside Toyota
701 9th Avenue North

Figure

2

920803.02

accurate estimate of groundwater gradient would require the installation of three monitoring wells.

Some of the findings of the 1988 Hart Crowser report are presented below:

- One composite soil sample from each soil boring, collected from an interval of 0 feet to the design depth (7.5 to 10 feet), was analyzed for total petroleum hydrocarbons (TPH) by EPA Method 418.1 (see Figure 3 for soil boring locations). Sample B-1, collected in the UST area, had a TPH concentration of 670 parts per million (ppm). Sample B-2, collected on the west side of the automobile repair area adjacent to the hydraulic lifts, had a TPH concentration of 1,200 ppm. The sample collected from near the western waste oil sump (B-3) was found to have a TPH concentration of 130 ppm. A fourth sample (B-4), collected from near the hydraulic lifts on the eastern side of the automobile repair area, had a concentration of 50 ppm. The remaining two samples (B-5, B-6) were collected from the sidewalk, adjacent to 9th Avenue North. Both of these samples had non-detectable TPH concentrations. Figure 4 presents sample concentrations at each boring location.

- A groundwater sample (B-6) collected from the monitoring well had non-detectable TPH and benzene, toluene, ethylbenzene, and xylene (BTEX) concentrations.

- An EP Toxicity metal analysis was performed on soil sample B-6, and metal concentrations were found to be near or below background levels.

In August 1992, Enviros performed a Phase II Site Assessment of the subsurface soil and groundwater at Bayside Toyota on behalf of the Seattle Commons and Mr. Kenney. That study yielded the information presented below:

- The existing monitoring well (MW1) was sampled and analyzed for TPH by method WTPH-418.1. The groundwater sample contained less than the method detection limit for TPH, which is reported as 0.5 ppm.

- Five hand auger borings were sampled inside the building. Petroleum hydrocarbons were found in three of the five soil boring locations (BH3, BH4, BH5). The deepest sample from each boring was submitted for analysis. Each soil sample was analyzed by method WTPH-HCID, a hydrocarbon identification scan. Sample BH3-9' was found to contain heavy oil, and was subsequently analyzed by WTPH-418.1. This analysis yielded a concentration of 5,800 ppm. Sample BH4-8.25' indicated the presence of diesel and heavy oil and was analyzed by WTPH-418.1. The sample was found to contain 120 ppm TPH. Sample BH5-8.5' was observed to have gasoline, diesel, and heavy oil range compounds. This sample was analyzed by WTPH-Gas/BTEX and WTPH-418.1, and TPH concentrations were 230 ppm and 420 ppm, respectively. Volatile BTEX compounds were analyzed, and benzene and toluene compounds had non-detectable concentrations at or above a method detection limit of 80 parts per billion (ppb). Ethylbenzene had a concentration of 88 ppb, and the total xylenes concentration was 730 ppb.

- Building debris and rubble were encountered in soils from hand auger borings on the west side of the building.

Enviros recommended further assessment to delineate the extent of petroleum hydrocarbons in on-site soil and groundwater. Enviros was contracted by Mr. Kenney to perform additional site assessment. These activities were conducted between the dates of October 30 and November 6, 1992.

1.3 Objectives

The site assessment was divided into three main tasks:

- Analysis of soils near the waste oil sump in the northwestern corner of the building;
- Analysis of soils in the vicinity of the 2,000-gallon waste oil/heating oil UST;
- Analysis of on-site groundwater.

The objective of the site assessment work was to further delineate the nature and extent of petroleum hydrocarbon contamination at the site.

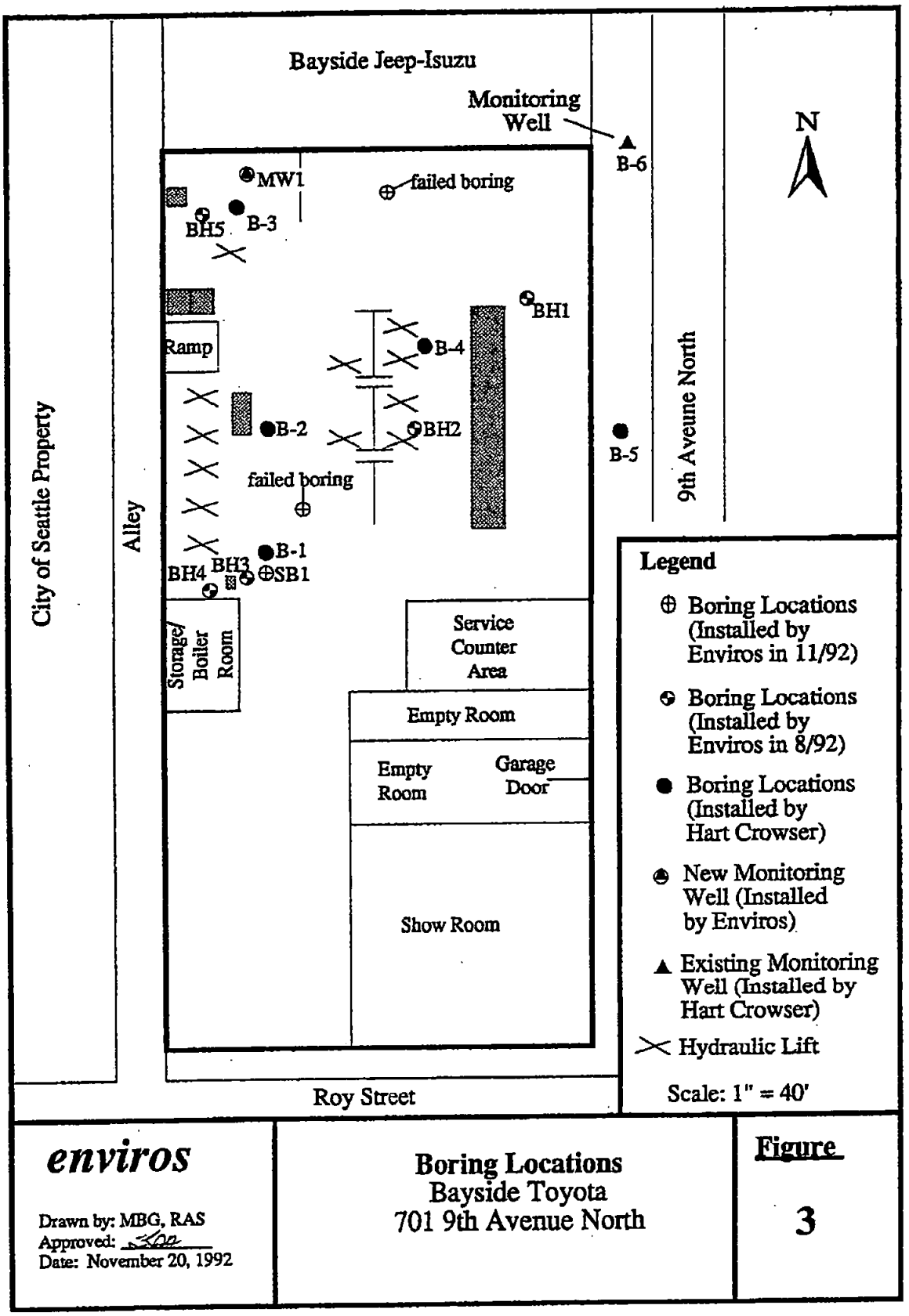
1.3.1 Deviations from Original Scope of Work

The following exceptions were made to the original scope of work submitted to Seattle Commons and Mr. Kenney. The scope of work proposed four soil borings, two of which would be converted into monitoring wells if groundwater was encountered. However, due to physical limitations of the building and subsurface soil conditions, only two soil borings were placed. One boring located adjacent to the waste oil sump was completed to a depth of 21.5 feet, and a monitoring well was constructed within the borehole. The other boring was completed to a depth of approximately 6.5 feet, where a steel pipe was encountered. One additional boring was attempted in the north-central portion of the automobile repair area; however, an underground pipe was encountered at the 3-foot depth. These changes also resulted in a reduction in the number of samples submitted for laboratory analysis.

2.0 FIELD ACTIVITIES

2.1 Soil Sampling and Analysis Methods

Between the dates of October 30 and November 3, 1992, Enviros conducted a subsurface soil investigation at Bayside Toyota. Ms. Rochelle Shaw of Enviros performed environmental sampling and drilling oversight. Pacific Testing Laboratories, based in Puyallup, Washington, was subcontracted to perform drilling services. A small, skid-mounted, Simco hollow stem auger rig, with an inside casing diameter of 3.38-inch, was used to install soil borings. The locations of the newly installed borings are shown in Figure 3. Access to the underlying soils for drilling required use of concrete sawing. Eastside Concrete Sawing, from Issaquah, Washington, was subcontracted to perform these services.



enviros

Drawn by: MBG, RAS
Approved: _____
Date: November 20, 1992

Boring Locations
Bayside Toyota
701 9th Avenue North

Figure

3

920803.02

A first soil boring was attempted but failed in the north-central portion of the automobile repair area. A 12-inch core was initially cut through the concrete in this location. Although only one layer of concrete was present in this location, this soil boring failed at a depth of 3 feet, where a pipe was encountered.

The first completed soil boring (MW1) was placed in the northwestern corner of the automobile repair area, adjacent to the waste oil sump. Two 6-inch layers of concrete, with 8-inches of soil in between, were present in this location. The first layer was slabsawed into a 20-inch square. The second layer was rotohammered into a 13-inch square to allow access for the 13-inch diameter drill bit of the auger.

Soil boring MW1 was converted to a monitoring well. The well was screened with 2-inch polyvinyl chloride (PVC), 0.020-inch slotted casing from a depth of 20 feet below ground surface (BGS) to 5 feet BGS. Five feet of 2-inch PVC casing was used from 5 feet BGS to the surface. A filter pack using Colorado Silica Sand was placed from 20 feet BGS to 2 feet BGS. A bentonite seal was placed in the annulus from 2 feet BGS to 1 foot BGS. Finally, a steel monument set into concrete was placed at the well head, flush with the surrounding ground surface.

A total of five soil samples were collected from soil boring MW1 (BT-MW1-5-6.5, BT-MW1-10-11.5, BT-MW1-11.5-13.0, BT-MW1-13-14.5, and BT-MW1-20-21.5). A 2-inch inside diameter (ID), 1.5-foot long, split spoon sampler was used to collect soil samples. Sample intervals at MW2 were 5.0-6.5 feet, 10.0-11.5 feet, 11.5-13.0 feet, 13.0-14.5 feet, and 20.0-21.5 feet. It is common for petroleum hydrocarbons to float on the surface of the water table, or soil/groundwater interface. Samples were collected continuously from 10 feet until 14.5 feet to ensure a soil sample was collected from the surface of the water table.

A second soil boring was attempted in the southern portion of the automobile repair area (see Figure 3 for sample locations). Concrete sawing was also required in this location. As with the previous boring location, the first layer was slabsawed into a 20-inch square, and the second layer was rotohammered into a 13-inch square. The boring was completed to a depth of approximately 6.5 feet BGS, where an object believed to be a steel pipe was encountered. One sample (BT-SB1-5-6.5) was collected from this boring from an interval of 5-6.5 feet BGS.

An additional location on the west side of the automobile repair area was chosen for sampling and the top layer of concrete removed. Due to time constraints, this boring was discontinued and refilled with cement.

A ThermoEnvironmental Instruments organic vapor monitor (OVM), Model 580B was used for field screening of background hydrocarbon concentrations and sample concentrations. This instrument is useful for assessing relative concentrations, but does not substitute for laboratory analysis. Often, heavier petroleum compounds do not contain and/or release as many volatile organic compounds to be detected by the OVM. The OVM readings for each sample collected are presented in the soil boring logs in Appendix A. Generally, the highest OVM readings were encountered in the 10-11.5 foot interval of soil boring MW1, with a reading of 6.0 parts per million as vapor (ppmv). The one sample collected from soil boring SB1 had an OVM reading of 0.0 ppmv.

Each soil sample collected was placed into a laboratory-cleaned, 4-ounce glass jar with a Teflon-lined lid, sealed, and placed on ice. Samples were then transported under chain-of-custody procedures to the Analytical Services, Inc. (ASI) laboratory in Redmond, Washington. A total of six soil samples were submitted to ASI. One sample from soil boring MW1 (BT-MW1-10-11.5) was selected for analysis based on OVM readings. A hydrocarbon identification scan was performed on this sample using method WTPH-HCID and indicated the presence of diesel-range petroleum hydrocarbons. Subsequent analyses were performed for TPH as diesel by method WTPH-Diesel and for halogenated volatiles by EPA Method 8010. One sample from soil boring SB1 (BT-SB1-5-6.5) was analyzed for TPH by method WTPH-418.1, based on previous Enviros sampling in the vicinity of SB1. The four remaining samples (BT-MW1-5-6.5, BT-MW1-11.5-13, BT-MW1-13-14.5, and BT-MW1-20-21.5) were archived in the event further chemical analyses were required.

Sampling equipment was decontaminated between each sample and between each hole. Auger flights were steam cleaned prior to use at the site and between use in each hole. Enviros equipment decontamination consisted of a liquinox wash/distilled water rinse, a second liquinox wash/distilled water rinse, methanol rinse, and a final distilled water rinse/air dry. Decontamination water from the drillers' steam-cleaning process and from the Enviros decontamination process were contained in sealed 55-gallon drums. In addition, soil cuttings from each boring were also placed in 55-gallon drums. A total of five 55-gallon drums are present on site. Three contain soil cuttings, one contains driller's decontamination water, and one contains well purge water.

2.2 Groundwater Sampling and Analysis Methods

Two monitoring wells (the pre-existing well, B-6, and the newly installed MW1) are present on-site, and groundwater samples were collected from them on November 6, 1992. Groundwater sampling activities were also conducted by Ms. Rochelle Shaw. Prior to development or sampling of each well, depth to water and depth to well bottom measurements were collected with a Solinst water level probe. This information was recorded to calculate the height of standing water in the well and ultimately, the well volume. The well volume refers to the volume of water in the well based on the current water level and is used as a reference for water removed from the well during development and purging.

Monitoring well MW1 required development to remove excess fines generated during the drilling process. Calculations determined monitoring well MW1 to have 1.467 gallons per well volume. The well was developed using a decontaminated, Teflon bailer. A total of 14 gallons were purged, which is equivalent to approximately 10 well volumes. Measurements of field parameters (pH, temperature, and conductivity) could not be collected from monitoring well MW1 due to equipment malfunction. However, the water was observed during the development process for changes in color and consistency. The first 10 gallons of water purged from the well were cloudy and dark gray in color. At approximately 10 gallons, the water cleared significantly. An odor of petroleum was also noted at this point. An OVM measurement was collected from the well, and had a reading of 18 ppmv. In addition, stringers of sheen were observed on the surface of the purge water.

After development of monitoring well MW1 was completed, groundwater sample BT-MW1-11/92 was collected in two 32-ounce amber bottles and in three 40-milliliter VOA vials. Extra

sample volumes were collected for this sample for laboratory quality assurance and quality control (QA/QC). Three drops of hydrochloric acid (HCl) were added as a preservative to the VOA vials.

Monitoring well B-6 was calculated to have 0.489 gallons per well volume. The well was purged of 3 gallons of water, equivalent to 6 well volumes. Monitoring well B-6 was also purged with a decontaminated Teflon bailer. An OVM measurement of the well indicated a concentration of 0.6 ppmv. The pH, temperature, and conductivity were measured for monitoring well B-6, and field parameter measurements are presented in Table 1 below.

Table 1. Measured Groundwater Parameters Collected During Well Purging

Volume Purged (gallons)	Temperature (^{o}F)	Conductivity (µS/cm)	pH
2.0	56.0	50.7	7.18
2.5	55.6	47.9	7.02
3.0	55.2	51.5	6.87

µS/cm - microSiemans per centimeter

After field parameters stabilized, groundwater sample BT-B6-11/92 was collected in one 32-ounce amber bottle and two 40-milliliter VOA vials. Three drops of HCl were added as preservative to the VOA vials.

All samples were transported on ice under chain-of-custody procedures to the ASI laboratory. Groundwater sample BT-MW1-11/92 was analyzed by method WTPH-Diesel, based on the earlier WTPH-HCID analysis of soil sample BT-MW1-10-11.5. Analysis by EPA Method 8010 for halogenated volatiles was also performed on this sample. Groundwater sample BT-B6-11/92 was analyzed by method WTPH-418.1.

The bailer used for well development and sample collection was decontaminated prior to use in the well and between each well. The decontamination process consisted of a liquinox wash/distilled water rinse, a liquinox wash/distilled water rinse, a methanol rinse, followed by a final distilled water rinse. Purge water was placed in a labeled, sealed, 55-gallon drum.

2.3 Field Observations

The results of soil and groundwater sampling indicated the site has the following conditions:

- The soils encountered in the location of monitoring well MW1 show alternating layers of clay, silt, fine sand, and building rubble (see Appendix A for soil boring logs).
- The soils were observed to have a strong odor of petroleum in the location of soil boring MW1, and the OVM had a reading of 6.0 ppmv.
- Groundwater from monitoring well MW1 was observed to have a strong petroleum odor and an OVM measurement of 18 ppmv.

3.0 ANALYTICAL RESULTS

3.1 Enviros November 1992 Results

Soil sample BT-MW1-10-11.5 was initially analyzed by method WTPH-HCID to determine the types of hydrocarbons present in the sample. Results indicated the presence of diesel-range compounds in this sample. The sample was then analyzed for TPH and halogenated volatiles by methods WTPH-Diesel and EPA Method 8010, respectively. Method WTPH-Diesel analysis yielded a concentration of 4,000 ppm. The Method 8010 analysis revealed a methylene chloride concentration of 1,100 ppb.

Soil sample BT-SB1-5-6.5 was analyzed for TPH by method WTPH-418.1, based on results of previous analyses in the area. The analysis indicated a TPH concentration of 94 ppm in this sample.

Groundwater sample, BT-MW1-11/92, was analyzed by method WTPH-Diesel, due to the findings of the soil sample HCID analysis. A concentration of 0.81 ppm TPH was indicated by the result of this analysis. This sample was also analyzed for halogenated volatiles by method 8010, and all compounds were at non-detectable levels.

Groundwater sample, BT-B6-11/92, was analyzed for TPH by method WTPH-418.1 and yielded a concentration of 0.92 ppm.

3.2 Summary of Analytical Results of Samples Collected at Bayside Toyota

Analytical results for all soil samples collected on-site are presented in Table 2 below.

Table 2. Summary of Analytical Results for Soil Samples Collected On-Site

Sample Identification (Location)	Depth (feet below ground surface)	Sample Collected by:	Analysis	Result	MTCA Method A cleanup level
BT-MW1-10-11.5 (MW1)	10-11.5	Enviros	HCID WTPH-D 8010	Diesel **4,000 ppm** 1,100 ppb (methylene chloride)	NA 200 ppm
BT-SB1-5-6.5 (SB1)	5-6.5	Enviros	WTPH-418.1	94 ppm	200 ppm
BH1-8.0' (BH1)	8.0	Enviros	HCID	Non-detect	NA

Table 2. Summary of Analytical Results for Soil Samples Collected On-Site (continued)

Sample Identification (Location)	Depth (feet below ground surface)	Sample Collected by:	Analysis	Result	MTCA Method A cleanup level
BH2-5.0' (BH2)	5.0	Enviros	HCID	Non-detect	NA
BH3-9.0' (BH3)	9.0	Enviros	HCID	Heavy oil	NA
			WTPH-418.1	**5,800 ppm**	200 ppm
BH4-8.25' (BH4)	8.25	Enviros	HCID	Diesel Heavy Oil	NA NA
			WTPH-418.1	120 ppm	200 ppm
BH5-8.5' (BH5)	8.5	Enviros	HCID	Diesel Heavy Oil Gasoline	NA NA NA
			WTPH-418.1	**420 ppm**	200 ppm
			WTPH-G	**230 ppm**	100 ppm
			BTEX/8020:		
			Benzene	<80 ppb	500 ppb
			Toluene	<80 ppb	40,000 ppb
			Ethylbenzene	88 ppb	20,000 ppb
			Total Xylenes	730 ppb	20,000 ppb
B-1 (soil) (B-1)	0-10 (composite)	Hart Crowser (12/7/88)	EPA 418.1	**670 ppm**	200 ppm
B-2 (soil) (B-2)	0-10 (composite)	Hart Crowser (12/7/88)	EPA 418.1	**1,200 ppm**	200 ppm
B-3 (soil) (B-3)	0-10 (composite)	Hart Crowser (12/7/88)	EPA 418.1	130 ppm	200 ppm
B-4 (soil) (B-4)	0-10 (composite)	Hart Crowser (12/7/88)	EPA 418.1	50 ppm	200 ppm
B-5 (soil) (B-5)	0-14 (composite)	Hart Crowser (12/8/88)	EPA 418.1	Non-detect	200 ppm
B-6 (soil) (B-6)	0-16.5 (composite)	Hart Crowser (12/8/88)	EPA 418.1	Non-detect	200 ppm

<## Concentration of analyte was below the method detection limit
BOLD Concentrations exceeding MTCA Method A cleanup levels
NA Not Applicable

A summary of results of groundwater analyses conducted at Bayside Toyota are presented in Table 3 on the next page.

Table 3. Summary of Analytical Results of Groundwater Samples Collected On-Site

Sample Identification (Location)	Sample Collected by:	Analysis	Results	MTCA Method A Cleanup Level
BT-MW1-11/92 (MW1)	Enviros	WTPH-Diesel 8010	0.81 ppm Non-detect	1.0 ppm 5 ppb
BT-B6-11/92 (B-6)	Enviros	WTPH-418.1	0.92 ppm	1.0 ppm
MW (water) (B-6)	Enviros	WTPH-418.1	Non-detect	1.0 ppm
B-6 (water) (B-6)	Hart Crowser (12/13/88)	EPA 418.1 BTEX	Non-detect Non-detect	1.0 ppm NA

NA Not applicable

Locations for all samples collected at Bayside Toyota and their associated analytical results are presented in Figure 4. For locations of samples with concentrations exceeding MTCA Method A cleanup criteria refer to Figure 5.

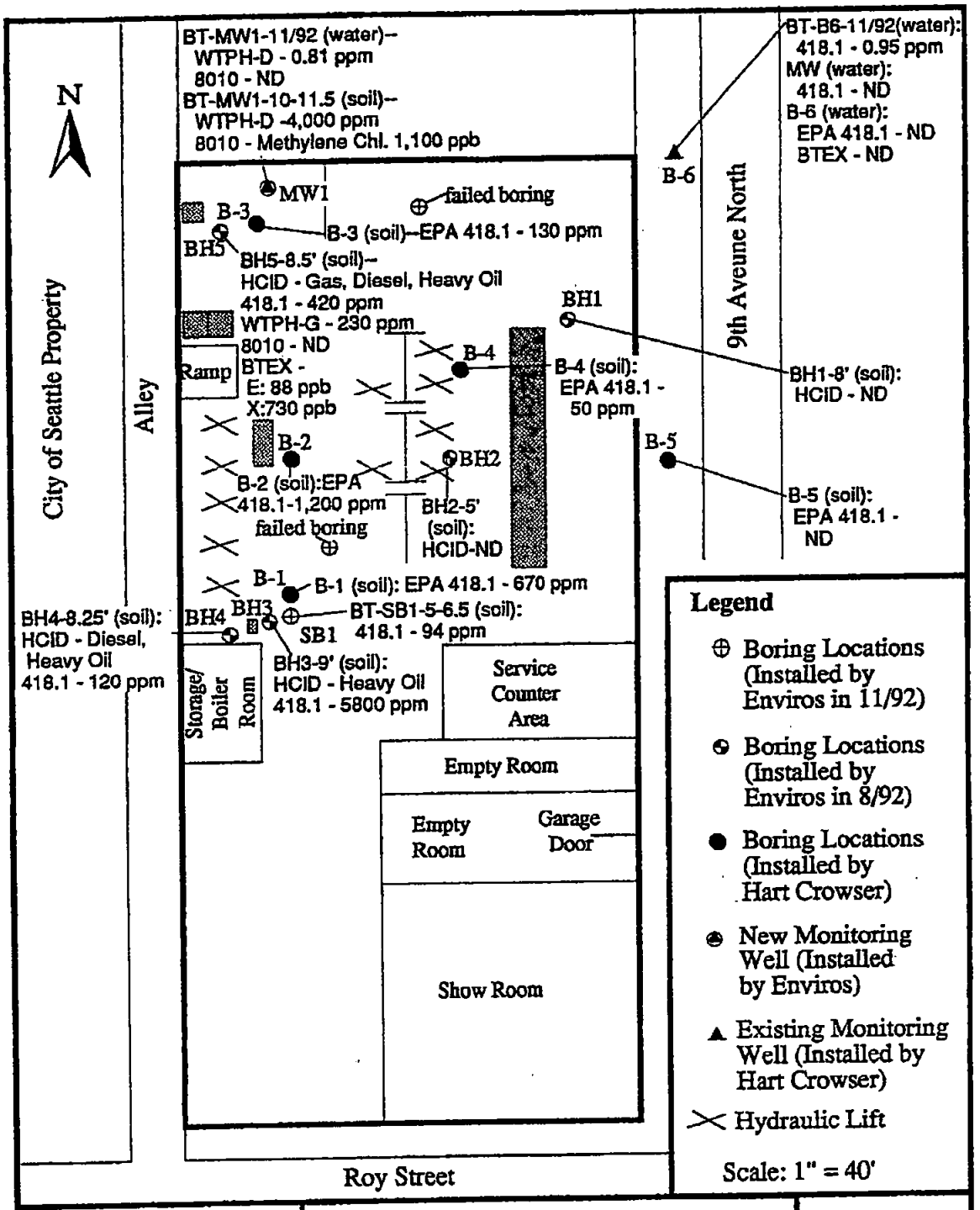
4.0 DISCUSSION

The results of the subsurface soil and groundwater investigations conducted at Bayside Toyota indicate there may be three source areas of TPH in the subsurface soils that exceed Ecology cleanup criteria. These areas include the heating oil/waste oil UST, the waste oil sump in the northwest corner of the building, and the hydraulic lift systems in the western half of the automobile repair area (see Figure 5).

4.1 Heating Oil/Waste Oil Underground Storage Tank

Petroleum hydrocarbons were encountered in all four of the soil borings placed around the heating oil/waste oil UST (B-1, BH3, BH4, and SB1) in TPH 418.1 concentrations ranging from 94 ppm to 5,800 ppm. An HCID scan detected the presence of heavy oil and diesel in two of the samples from this area (BH3-9', BH4-8.25').

The lateral extent of petroleum hydrocarbon contamination in this area is undefined at this time; however, contamination appears to extend a minimum distance of 7 feet northeast from the northeast corner of the boiler room. The vertical extent of petroleum hydrocarbons appears to be at least 9 feet in the location of soil boring BH3, where a concentration of 5,800 ppm was detected.



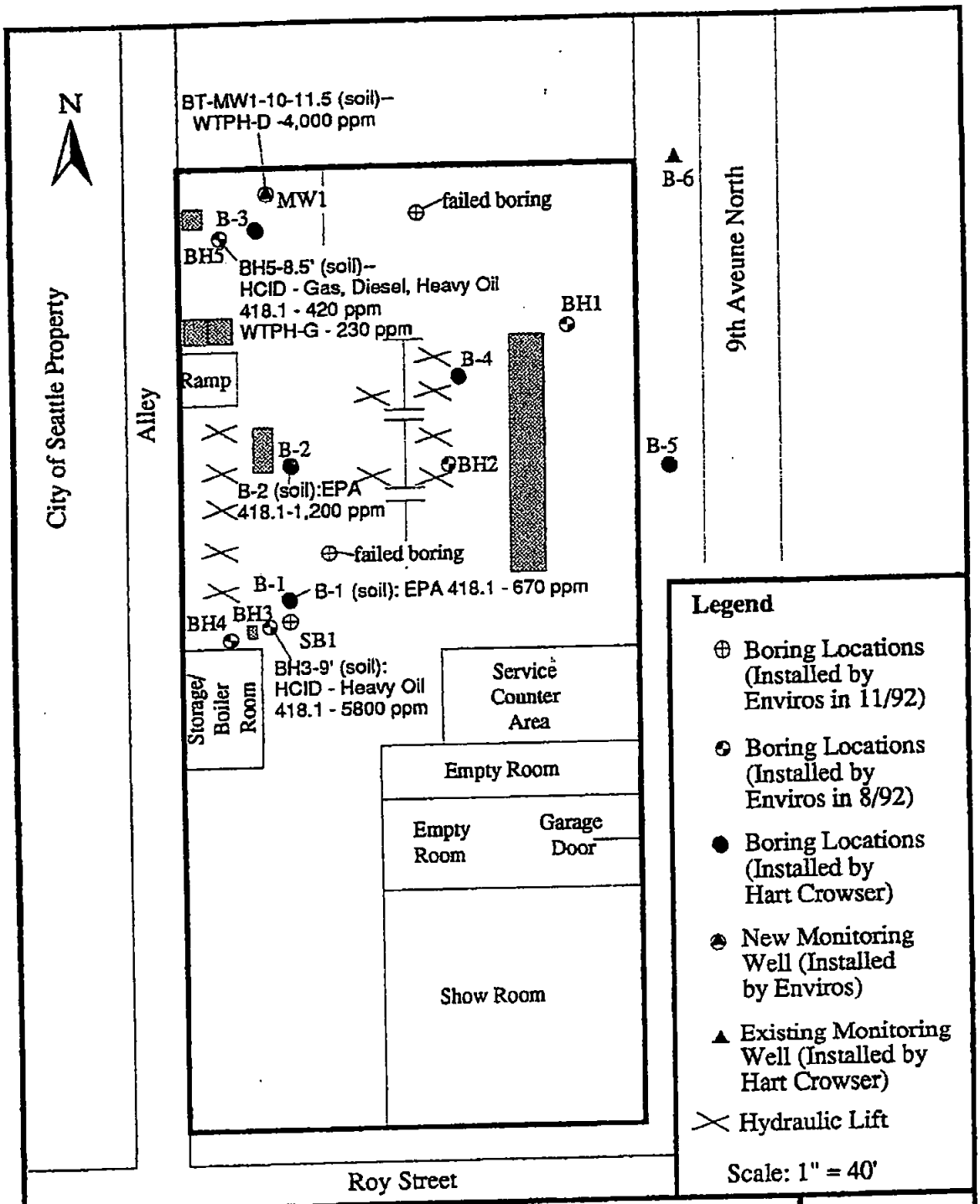
enviros

Drawn by: MBG, RAS
Approved: KRS
Date: November 20, 1992

Sample Concentrations
Bayside Toyota
701 9th Avenue North

Figure
4

920803.02



enviros

Drawn by: MBG, RAS
Approved: _____
Date: November 20, 1992

Sample Concentrations Exceeding MTCA Method A

Bayside Toyota
701 9th Avenue North

Figure 5

920803.02

4.2 Hydraulic Lift System

Three soil samples (B-2, B-4, and BH1) were collected in the area of the hydraulic lifts and were analyzed for TPH by various methods. Only one Hart Crowser (1988) sample (B-2), with a TPH concentration of 1,200 ppm, exceeded the MTCA Method A cleanup levels for TPH. The nature of contamination in this area is undefined, however. The Hart Crowser samples were collected prior to the current regulatory guidelines that recommend an HCID scan. Therefore, the source of the TPH in this area cannot be estimated based on composition. It may be possible that the contamination associated with soil boring B-2 is related to the UST, or even the waste oil sump. However, the proximity of the contaminated samples to the hydraulic system suggest that petroleum hydrocarbons present in this area may be related to the hydraulic system.

The lateral extent of contamination in the area of the hydraulic lift system is currently undefined, as is the vertical extent. Most of the Hart Crowser samples were composited from an interval from 0 to a depth of 7.5 to 10 feet. Therefore, contamination may be present at any location between 0 to 10 feet.

4.3 Waste Oil Sump

Petroleum hydrocarbons have been encountered in all three soil borings (B-3, BH5, and MW1) placed around the waste oil sump. Concentrations of TPH in soils ranged from 130 to 420 ppm for 418.1 analyses, and were 230 ppm by WTPH-Gas/BTEX and 4,000 ppm by WTPH-Diesel. In addition, ethylbenzene and total xylenes concentrations below MTCA Method A cleanup levels were detected in a soil sample (BH5-8.5'). The analytical results for one soil sample (BT-MW1-10-11.5) indicated a concentration of 1,100 ppb methylene chloride (also known as dichloromethane). However, the associated laboratory method blank for this sample also contained methylene chloride. Based on the contamination of the laboratory method blank, the results suggest that the actual concentration of methylene chloride for this sample is probably not detectable.

The lateral extent of petroleum hydrocarbon contamination in the area of the waste oil sump is undefined. However, soil sample BT-MW1-10-11.5 was found to have a concentration of 4,000 ppm TPH as diesel at least 6 feet to the east of the waste oil sump. Vertically, contamination is known to extend to a depth of at least 11.5 feet (Sample BT-MW1-10-11.5, 4,000 ppm) and likely close to 15 feet, based on analytical results and field screening.

The groundwater sample collected from monitoring well MW1 (BT-MW1-11/92) had a concentration of 0.81 ppm TPH as diesel. Methylene chloride was not detected in the groundwater; however, the results of the TPH analysis and use of the OVM indicate the groundwater at the site has been impacted to a certain extent. However, the concentrations in groundwater on-site do not exceed MTCA Method A cleanup levels.

Groundwater sample (BT-B6-11/92) also had a detectable TPH concentration of 0.92 ppm. It is unlikely that this concentration represents migration of contaminants. Two previous samples from monitoring well B-6 have both had non-detectable concentrations of TPH. The TPH concentration in groundwater sample BT-B6-11/92 is likely displaying cross-contamination from the bailer. Even though the bailer goes through a decontamination process, the potential still exists for cross-contamination.

5.0 RECOMMENDATIONS

Enviros recommends that the heating oil/waste oil UST present on-site be decommissioned. In addition, a corrective action plan should be developed that may include abandonment, removal, or on-site remediation of contaminated soils and/or treatment of contaminated groundwater.

The approach of accomplishing the aforementioned goals is ultimately dependent on the status of the Bayside Toyota Building. If demolition is planned, removal of the UST and contaminated soils could easily be conducted at that time. In the interim prior to demolition, the on-site groundwater should continue to be monitored for compliance.

However, if demolition is not planned for the near future, the UST should still be decommissioned. Due to the placement of the UST near the sub-basement and walls of the building, decommissioning of the UST in-place could be considered. It may also be worthwhile to consider further delineation of the extent of contamination in the soils beneath the building. Source areas have been identified, but the extent of contamination has not been defined. Additional soil borings and one additional monitoring well would be beneficial in estimating volumes of contamination and calculating the groundwater flow direction beneath the site. Any additional information gained from further assessment work would assist in providing a more complete and accurate corrective action plan for the problems associated with the site.

The following factors should be considered when selecting a corrective action plan for the site:

- Asbestos-containing materials (ACM) have been identified at the site in the insulation on elbows and straights of steam supply piping system found above the boiler, boiler insulation and debris in the boiler room, packing and sealant around windows, and roofing material around vents on the south end of the building. If the boiler room has not already been cleared of debris and the ACM material encapsulated, those activities should be conducted to prevent asbestos exposure to occupants. Most of the other ACM present in the building are not an exposure hazard to the building occupants (Asbestos/PCB Ballast Survey completed by Prezant Associates, Inc., August 19, 1992). Therefore, they may be left in place at this time. If the potential exists for ACM to be damaged or disturbed due to maintenance, remodelling, renovating, or demolition activities, the asbestos-containing material should be removed and disposed of in accordance with Washington State regulations. Roofing materials were found to contain non-friable asbestos. This material may be removed and disposed of as general construction debris, as long as non-mechanical methods are used.

- Approximately 450 light ballasts containing PCB are found throughout the building (Asbestos/PCB Ballast Survey completed by Prezant Associates, Inc., August 19, 1992). None of the ballasts inspected by Prezant were found to be leaking. However, these ballasts should be removed and disposed of as PCB-containing materials in accordance with Washington State regulations prior to any renovation or demolition of the building.

- The building is aged and the foundation may not be stable. It is likely that a significant portion of the contamination in soils beneath the building occur close to or beneath the walls of the building. Excavation too close to the building foundation and walls may weaken the structure of the building even further. For safety reasons, it may be best to remove contaminated soils after demolition of the building structure.

No warranty is expressly stated or implied in this report with respect to the overall condition of the subsurface soil or the groundwater beneath the site. This report does not intend, nor does it purport, to encompass every record, report, or document available on the site or the surrounding properties. This report reflects our visual and olfactory observations of the condition of the property on the day of the site survey only, and does not cover any other conditions found on the property that were not visible during the site survey.

Enviros is pleased to be of service on this project. If you have any questions regarding this submittal, please contact the undersigned at your convenience.

Sincerely,

Enviros Incorporated

Rochelle A. Shaw
Hydrogeologist
(206) 828-2522

Brian L. Sherrod
Senior Geologist
(206) 828-2519

Kathleen Goodman, R.G.
Principal Geoscientist
(206) 828-2503

cc: File # 920803.02

REFERENCES

Enviros. Phase 2 Final Report, Groundwater and Subsurface Soil Investigation at Bayside Toyota, Seattle, Washington. Dated August 28, 1992.

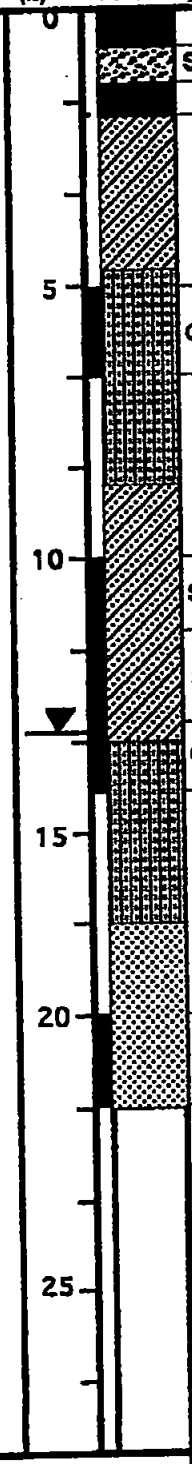
Hart Crowser, Inc. Preliminary Environmental Assessment. Dated December 30, 1988.

Prezant Associates, Inc. Asbestos/PCB Ballast Survey. Dated August 19, 1992.

APPENDIX A:

SOIL BORING LOGS

Log of Boring, MW1



Analytical Results	Blow Count (per 6 inches)	Sample Recovery (%)	Depth (ft)	USCS Symbol	Soil Description	PID/ Remarks
			0		Concrete Pavement	
				SW	Olive gray, gravelly, medium to coarse SAND.	
					Concrete Pavement	
BT-MW1-5-6.5	2-2-3	56	5	OL	top 6" - Mottled CLAY: some interlayered fine sand, moist, not wet, mottled green and orange. rest is coarse-grained BUILDING RUBBLE.	OVM = 0.9 ppmv
BT-MW1-10-11.5 HCID - Diesel WTPH-Diesel - 4,000 ppm 8010 - Methyl. Chlor. 1,100 ppm	4-4-2	67	10	SC	top 4" - clayey SILT: moist, brown, breaks easily. next 5" - silty CLAY: blue, will not mold. rest - loose, blue-gray, fine SAND: poorly-graded; moist; blue-gray; strong odor of characteristic of petroleum.	OVM = 6.0 ppmv
BT-MW1-11.5-13.0	4-2-2	72		SC		
BT-MW1-13-14.5	3-3-3	67		OL	top 3" - slough next 4" - clayey-silty-fine SAND: occasional gravel to 1/2" size; moderately-graded; moist; blue. next 3" - CLAY: blue; stiff, will not mold. rest is Loose, blue, fine SAND: poorly-graded; moist; blue; strong odor of petroleum.	OVM = 1.7 ppmv
			15		top 3" - Loose, silty, fine SAND: poorly-graded; wet; blue-gray; odor of petroleum. rest is clayey SILT: blue-gray, stiff, won't mold.	OVM = 2.5 ppmv
BT-MW1-20-21.5	2-2-2	100	20	SP	Loose, blue-gray, fine SAND: poorly-graded; wet; blue-gray.	OVM = 0.9 ppmv
					END BORING AT 21.5 FEET	
			25			

enviros

Job No.: 920803.02 Appr.: Kpr Date: 11/20/92

Date Drilled: November 2, 1992
Geologist/Engineer: RAS
Equipment: Hollow-stem Auger
Ground Water Level When Drilling: 13 Feet
Project Name: Bayside Toyota

A-1

Log of Boring, SB1

Analytical Results	Blow Count (per 6 inches)	Sample Recovery (%)	Depth (ft)	Soil Profile	USCS Symbol	Soil Description	PID/ Remarks
			0			Concrete Pavement	
					SW	Olive gray, gravelly, medium to coarse SAND.	
						Concrete Pavement	
BT-SB1-5-6.5 WTPH-418.1 - 94 ppm	2-2-1	89	5		SM	top 9" - sandy SILT: gravels (30%); moderately poorly-graded; dry; stiff; crumbles; golden-brown in color. rest is Rubble with silty matrix, some black material similar to asphalt present.	OVM = 0.0 ppmv
						END BORING AT 6.5 FEET	
			10				
			15				
			20				
			25				

enviros

Job No.: 920803.02 Appr.: Kpd Date:11/20/92

Date Drilled: November 3, 1992
Geologist/Engineer: RAS
Equipment: Hollow-stem Auger
Ground Water Level When Drilling: NA
Project Name: Bayside Toyota

A-2

APPENDIX B:

ANALYTICAL DATA

Analytical Services, Inc.
12277 134th Court NE Redmond, Washington 98052
(206) 820-4551 (fax) 820-6337

November 18, 1992

Brian Sherrod, Project Manager
Enviros Inc.
5808 Lk. WA Blvd. N.E.
Suite 100
Kirkland, WA 98033

Dear Brian:

Enclosed are the results of the analyses of samples submitted on November 3, 1992 from Project 920803.02.

The positive results for methylene chloride in sample BT-MW1-10-11.5 should be considered nondetect and an estimated quantitation limit, based on associated method blank results.

We appreciate the opportunity to be of service to you on this project. If you have any questions regarding the reported results, please feel free to call me.

Sincerely,

for Andrew J. Riddell
Project Chemist

AJR:tmh

Enclosures

Date of Report: November 18, 1992
Samples Submitted: November 3, 1992
Project: 920803.02
Analysis: WTPH-HCID

Client: Enviros, Inc.
File ID: 11-002
Matrix: Soil

Lab ID:	Client ID	GC Characterization	Surrogate Recovery
11-002-2	BT-MW1-10-11.5	The chromatogram indicates the presence of hydrocarbons in the Diesel C12-C24 range.	76%
Method Blank	----	<20 ppm Gasoline <50 ppm Diesel <100 ppm Oil	98%

Date of Report: November 18, 1992
Samples Submitted: November 3, 1992
Project: 920803.02
Analysis: WTPH-D

Client: Enviros, Inc.
File ID: 11-002
Matrix: Soil

Lab ID	Client ID	Result* mg/kg	Surrogate Recovery
11-002-2	BT-MW1-10-11.5	4,000	**
Method Blank	----	<25	90%
11-002-2 Duplicate	BT-MW1-10-11.5	3,900	**

* reported results corrected for sample moisture

** diluted out

Duplicate RPD = 2.5; acceptable

Date of Report: November 18, 1992
Samples Submitted: November 3, 1992
Project: 920803.02
Analysis: WTPH-418.1

Client: Enviros, Inc.
File ID: 11-002
Matrix: Soil

Lab ID #	Client ID	Percent Moisture	Result* mg/kg
11-002-6	BT-SB1-5-6.5	29	94
Method Blank	---	--	<25
11-003-1 QC	---	14	170
11-003-1 QC Duplicate	---	14	160

* reported results corrected for sample moisture

QC - Quality Control

Duplicate RPD = 6.1; acceptable

Date of Report: November 18, 1992
Samples Submitted: November 3, 1992
Project: 920803.02
Analysis: EPA 8010

Client: Enviros, Inc.
File ID: 11-002
Matrix: Soil

Client ID: BT-MW1-10-11.5
Lab ID: 11-002-2

Parameter	Result* ug/kg (ppb)
1,1-Dichloroethylene	<180
Methylene Chloride	1,100[B]
t-Dichloroethylene	<60
1,1-Dichloroethane	<60
Chloroform	<100
1,1,1-Trichloroethane	<60
Carbon Tetrachloride	<60
1,2-Dichloroethane	<60
Trichloroethylene	<60
1,2-Dichloropropane	<60
Bromodichloromethane	<100
cis-1,3-Dichloropropene	<96
trans-1,3-Dichloropropene	<23
1,1,2-Trichloroethane	<60
Tetrachloroethylene	<60
Dibromochloromethane	<100
Chlorobenzene	<300
Bromoform	<300
1,1,2,2-Tetrachloroethane	<60
1,3-Dichlorobenzene	<300
1,4-Dichlorobenzene	<300
1,2-Dichlorobenzene	<300
Surrogate Recovery	93%

* reported results corrected for sample moisture

B - analyte detected in the associated method blank

Date of Report: November 18, 1992
Samples Submitted: November 3, 1992
Project: 920803.02
Analysis: EPA 8010

Client: Enviros, Inc.
File ID: 11-002
Matrix: Soil

Client ID: BT-MW1-10-11.5
Lab ID: 11-002-2 Duplicate

Parameter	Result* ug/kg (ppb)
1,1-Dichloroethylene	<180
Methylene Chloride	500 B
t-Dichloroethylene	<60
1,1-Dichloroethane	<60
Chloroform	<100
1,1,1-Trichloroethane	<60
Carbon Tetrachloride	<60
1,2-Dichloroethane	<60
Trichloroethylene	<60
1,2-Dichloropropane	<60
Bromodichloromethane	<100
cis-1,3-Dichloropropene	<96
trans-1,3-Dichloropropene	<23
1,1,2-Trichloroethane	<60
Tetrachloroethylene	<60
Dibromochloromethane	<100
Chlorobenzene	<300
Bromoform	<300
1,1,2,2-Tetrachloroethane	<60
1,3-Dichlorobenzene	<300
1,4-Dichlorobenzene	<300
1,2-Dichlorobenzene	<300
Surrogate Recovery	93%

* reported results corrected for sample moisture

B - analyte detected in the associated method blank

Date of Report: November 18, 1992
Samples Submitted: November 3, 1992
Project: 920803.02
Analysis: EPA 8010

Client: Enviros, Inc.
File ID: 11-002
Matrix: Soil

Lab ID: Method Blank

Parameter	Result ug/kg (ppb)
1,1-Dichloroethylene	<150
Methylene Chloride	440
t-Dichloroethylene	<50
1,1-Dichloroethane	<50
Chloroform	<85
1,1,1-Trichloroethane	<50
Carbon Tetrachloride	<50
1,2-Dichloroethane	<50
Trichloroethylene	<50
1,2-Dichloropropane	<50
Bromodichloromethane	<85
cis-1,3-Dichloropropene	<81
trans-1,3-Dichloropropene	<19
1,1,2-Trichloroethane	<50
Tetrachloroethylene	<50
Dibromochloromethane	<85
Chlorobenzene	<250
Bromoform	<250
1,1,2,2-Tetrachloroethane	<50
1,3-Dichlorobenzene	<250
1,4-Dichlorobenzene	<250
1,2-Dichlorobenzene	<250
Surrogate Recovery	108%

Date of Report: August 10, 1992
Samples Submitted: June 25, 1992
Project: 900819 Task 15.3
Analysis: EPA 8010

Client: Enviros, Inc.
File ID: 06-049
Matrix: Soil

Client ID: BT-MW1-10-11.5
Lab ID: 11-002-2

Parameter	Matrix Spike Recovery	MS Duplicate Recovery	RPD
1,1-Dichloroethylene	117%	68%	52
Methylene Chloride	105%	78%	30
t-Dichloroethylene	75%	64%	16
1,1-Dichloroethane	73%	66%	10
Chloroform	70%	65%	7
1,1,1-Trichloroethane	73%	64%	13
Carbon Tetrachloride	69%	63%	9
1,2-Dichloroethane	63%	60%	5
Trichloroethylene	69%	65%	6
1,2-Dichloropropane	73%	68%	7
Bromodichloromethane	75%	70%	7
cis-1,3-Dichloropropene	72%	66%	9
trans-1,3-Dichloropropene	105%	99%	6
1,1,2-Trichloroethane	73%	69%	6
Tetrachloroethylene	71%	64%	10
Dibromochloromethane	72%	68%	6
Chlorobenzene	75%	69%	8
Bromoform	138%	140%	1
1,1,2,2-Tetrachloroethane	83%	88%	6
1,3-Dichlorobenzene	76%	73%	4
1,4-Dichlorobenzene	75%	72%	4
1,2-Dichlorobenzene	74%	71%	4
Surrogate Recovery	103%	100%	3

MS - Matrix Spike

11-002

CHAIN OF CUSTODY RECORD

Project Name: SC/BT
Project #: 920803.02
Send Report To: Brian Sherrod Ext. #: 2519
Sample Disposal Method: ✓ by laboratory ($5/sample)
___ to be returned to site

	Sample Identification	Date Sampled	Sample Type	WTPH-HCID	WTPH-D	WTPH-D	WTPH-418.1 modified	Aromatics*	8010		
1	BT-MW1-5-6.5	11/2/92	soil					X			
2	BT-MW1-10-11.5	11/2/92	(	X		*			*		
3	BT-MW1-11.5-13.0	11/2/92	)					X			
4	BT-MW1-13-14.5	11/2/92	(					X			
5	BT-MW1-20-21.5	11/2/92	)					X			
6	BT-SB1-5-6.5	11/3/92	)				*	X			
	* ANALYSIS ADDED 11/6/92										

ANALYSES REQUESTED

* further analyses dependent on result of HCID

1. RELINQUISHED BY:	Date:
Signature: Rochelle C Shaw	11/3/92
Printed Name: Rochelle Shaw	Time:
Firm: Enviros	125 PM
1. RECEIVED BY:	Date:
Signature:	
Printed Name:	Time:
Firm:	

2. RELINQUISHED BY:	Date:
Signature: Lisa Barley	11/3/92
Printed Name: Lisa Barley	Time:
Firm: ASI	1325
2. RECEIVED BY:	Date:
Signature:	
Printed Name:	Time:
Firm:	

Enviros, Inc. (206) 827-5525 (fax) 827-3299
5808 Lake Washington Boulevard Northeast
Kirkland (Seattle) Washington 98033

Analytical Services, Inc.
12277 134th Court NE Redmond, Washington 98052
(206) 820-4551 (fax) 820-6337

November 23, 1992

Brian Sherrod, Project Manager
Enviros Inc.
5808 Lk. WA Blvd. N.E.
Suite 100
Kirkland, WA 98033

Dear Brian:

Enclosed are the results of the analyses of samples submitted on November 6, 1992 from Project 920803.02.

We appreciate the opportunity to be of service to you on this project. If you have any questions regarding the reported results, please feel free to call me.

Sincerely,

Andrew J. Riddell
Project Chemist

AJR:tmh

Enclosures

Date of Report: November 23, 1992
Samples Submitted: November 6, 1992
Project: 920803.02
Analysis: WTPH-D

Client: Enviros, Inc.
File ID: 11-006
Matrix: Water

Lab ID	Client ID	Result mg/L	Surrogate Recovery
11-006-2	BT-MW1-11/92	0.81	100%
Method Blank	---	<0.25	78%
11-007-3 QC	---	<0.25	78%
11-007-3 QC Duplicate	---	<0.25	89%

QC - Quality Control

Date of Report: November 23, 1992
Samples Submitted: November 6, 1992
Project: 920803.02
Analysis: WTPH-418.1

Client: Enviros, Inc.
File ID: 11-006
Matrix: Water

Lab ID #	Client ID	Result
11-006-1	BT-B6-11/92	0.92
Method Blank	---	<0.50
11-007-1 QC	---	0.85
11-007-1 QC Duplicate	---	0.72

QC - Quality Control

Date of Report: November 23, 1992
Samples Submitted: November 6, 1992
Project: 920803.02
Analysis: EPA 8010

Client: Enviros, Inc.
File ID: 11-006
Matrix: Water

Client ID: BT-MW1-11/92
Lab ID: 11-006-2

Parameter	Result ug/L (ppb)
1,1-Dichloroethylene	<3
Methylene Chloride	<5
t-Dichloroethylene	<1
1,1-Dichloroethane	<1
Chloroform	<1.7
1,1,1-Trichloroethane	<1
Carbon Tetrachloride	<1
1,2-Dichloroethane	<1
Trichloroethylene	<1
1,2-Dichloropropane	<1
Bromodichloromethane	<1.7
cis-1,3-Dichloropropene	<1.6
trans-1,3-Dichloropropene	<0.38
1,1,2-Trichloroethane	<1
Tetrachloroethylene	<1
Dibromochloromethane	<1.7
Chlorobenzene	<5
Bromoform	<5
1,1,2,2-Tetrachloroethane	<3
1,3-Dichlorobenzene	<5
1,4-Dichlorobenzene	<5
1,2-Dichlorobenzene	<5
Surrogate Recovery	63%

Date of Report: November 23, 1992
Samples Submitted: November 6, 1992
Project: 920803.02
Analysis: EPA 8010

Client: Enviros, Inc.
File ID: 11-006
Matrix: Water

Lab ID: Method Blank

Parameter	Result ug/L (ppb)
1,1-Dichloroethylene	<3
Methylene Chloride	5.6
t-Dichloroethylene	<1
1,1-Dichloroethane	<1
Chloroform	<1.7
1,1,1-Trichloroethane	<1
Carbon Tetrachloride	<1
1,2-Dichloroethane	<1
Trichloroethylene	<1
1,2-Dichloropropane	<1
Bromodichloromethane	<1.7
cis-1,3-Dichloropropene	<1.6
trans-1,3-Dichloropropene	<0.38
1,1,2-Trichloroethane	<1
Tetrachloroethylene	<1
Dibromochloromethane	<1.7
Chlorobenzene	<5
Bromoform	<5
1,1,2,2-Tetrachloroethane	5.3
1,3-Dichlorobenzene	<5
1,4-Dichlorobenzene	<5
1,2-Dichlorobenzene	<5
Surrogate Recovery	100%

Date of Report: November 23, 1992
Samples Submitted: November 6, 1992
Project: 920803.02
Analysis: EPA 8010

Client: Enviros, Inc.
File ID: 11-006
Matrix: Water

Lab ID: 11-007-3 QC

Parameter	Original Result ug/L	Duplicate Result ug/L	RPD
1,1-Dichloroethylene	<3	<3	NC
Methylene Chloride	<5	<5	NC
t-Dichloroethylene	<1	<1	NC
1,1-Dichloroethane	<1	<1	NC
Chloroform	<1.7	<1.7	NC
1,1,1-Trichloroethane	<1	<1	NC
Carbon Tetrachloride	<1	<1	NC
1,2-Dichloroethane	<1	<1	NC
Trichloroethylene	<1	<1	NC
1,2-Dichloropropane	<1	<1	NC
Bromodichloromethane	<1.7	<1.7	NC
cis-1,3-Dichloropropene	<1.6	<1.6	NC
trans-1,3-Dichloropropene	<0.38	<0.38	NC
1,1,2-Trichloroethane	<1	<1	NC
Tetrachloroethylene	<1	<1	NC
Dibromochloromethane	<1.7	<1.7	NC
Chlorobenzene	<5	<5	NC
Bromoform	<5	<5	NC
1,1,2,2-Tetrachloroethane	<3	<3	NC
1,3-Dichlorobenzene	<5	<5	NC
1,4-Dichlorobenzene	<5	<5	NC
1,2-Dichlorobenzene	<5	<5	NC
Surrogate Recovery	80%	75%	6

QC - Quality Control

RPD - Relative Percent Difference

NC - Not Calculated

Date of Report: November 23, 1992
Samples Submitted: November 6, 1992
Project: 920803.02
Analysis: EPA 8010

Client: Enviros, Inc.
File ID: 11-006
Matrix: Water

Lab ID: 11-007-3 QC

Parameter	Matrix Spike Recovery	MS Duplicate Recovery	RPD
1,1-Dichloroethylene	100%	107%	7
Methylene Chloride	107%	110%	3
t-Dichloroethylene	87%	95%	9
1,1-Dichloroethane	98%	105%	7
Chloroform	73%	82%	12
1,1,1-Trichloroethane	78%	88%	12
Carbon Tetrachloride	78%	90%	14
1,2-Dichloroethane	68%	75%	10
Trichloroethylene	80%	87%	8
1,2-Dichloropropane	80%	87%	8
Bromodichloromethane	81%	88%	8
cis-1,3-Dichloropropene	80%	85%	6
trans-1,3-Dichloropropene	101%	110%	9
1,1,2-Trichloroethane	82%	88%	7
Tetrachloroethylene	83%	92%	10
Dibromochloromethane	81%	84%	4
Chlorobenzene	78%	87%	11
Bromoform	162%	180%	11
1,1,2,2-Tetrachloroethane	118%	128%	8
1,3-Dichlorobenzene	82%	91%	10
1,4-Dichlorobenzene	81%	89%	9
1,2-Dichlorobenzene	78%	87%	11
Surrogate Recovery	93%	100%	7

QC - Quality Control

RPD - Relative Percent Difference

1-006

CHAIN OF CUSTODY RECORD

Project Name: SC/BT
Project #: 920803.07
Send Report To: Brian Sherrod Ext. #: 2519
Sample Disposal Method: X by laboratory ($5/sample)
___ to be returned to site

Sample Identification	Date Sampled	Sample Type	WTPH-HCID	WTPH-D	WTPH-D	WTPH-418.1	Archive Via Viale	8010		
~~MW1-11/92~~	11/6/92	Water				X	X	X		
~~MW2-11/92~~	11/6/92	Water				X	X	X		
change to BT-MW1-11/92										
change to BT-B6-11/92										
changes by R&S, Environs 11/23/92										

NO

1. RELINQUISHED BY:	Date: 11/6/92	2. RELINQUISHED BY:	Date:
Signature: Rochelle Shaw	Time: 1400	Signature:	Time:
Printed Name: Rochelle Shaw		Printed Name:	
Firm: Environs		Firm:	
1. RECEIVED BY:	Date: 11/6/92	2. RECEIVED BY:	Date:
Signature: Lisa Burley	Time: 1400	Signature:	Time:
Printed Name: Lisa Burley		Printed Name:	
Firm: ASI		Firm:	

Environs, Inc. (206) 827-5525 (fax) 827-3299
5808 Lake Washington Boulevard Northeast
Kirkland (Seattle) Washington 98033

SEATTLE FILE COPY

HARTCROWSER

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699
206.324.9530

Earth and Environmental Technologies
J-2295

December 30, 1988

Lake Union Air
1100 Westlake Avenue North
Seattle, Washington 98109

Attn: Mr. Robert Cysewski

Re: Preliminary Environmental Assessment
Frank Kenney Toyota/Volvo Property
800 Ninth Avenue North
Seattle, Washington

Dear Mr. Cysewski:

This letter report presents the results of our preliminary environmental assessment at the Frank Kenney Toyota/Volvo property located at 800 Ninth Avenue North in Seattle, Washington (Figure 1). The work was accomplished in accordance with the Hart Crowser proposal number 89-40-1055, dated December 2, 1988, as modified through telephone conversations with you and Jerry Kenney during the course of the project. The purpose of the work was to assist the current owner/seller, Frank Kenney Toyota/Volvo and the potential buyer, Bayside Toyota, in assessing whether or not past site activities have adversely affected site conditions.

We understand that Bayside Toyota is interested in acquiring the property through purchase. It is also our understanding that the property and building will continue to operate in similar fashion as an automobile maintenance/repair shop and show room. The building that occupies the majority of the property is approximately seventy years old and currently houses an underground storage tank used for waste oil. The building also contains numerous hydraulic lifts and two oil/water separator sumps (See Figure 2). The present Frank Kenney Toyota/Volvo automobile maintenance and repair service has been in operation since 1978.

This work was conducted and this letter report prepared in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of Bayside Toyota and Frank Kenney Toyota/Volvo for specific application to the Frank Kenney Toyota/Volvo Property. This report is not meant to represent a legal opinion. No other warranty, express or implied, is made.

In order to complete this evaluation, a historical background search, agency file review, site reconnaissance, and sampling and analysis program were conducted.

Our work included the following:

- Conducting a historical background search;

- Inquiring into the existence of available and archived site information files at the Washington State Department of Ecology (Ecology), Northwest Regional and Headquarter Offices respectively;

- Conducting a site reconnaissance to observe the facilities;

- Conducting interviews with the current owner and personnel working in the service area;

- Hand-augering four soil borings (to a depth of 7.5 to 10 feet) through holes cored through the floor inside the building (See Figures 1 and 2);

- Drilling two soil borings with motorized hollow-stem auger outside the building--one on the northeastern corner (presumed downgradient position of the property) and one between the northeastern and southeastern corner (See Figures 1 and 2);

- Collecting subsurface soil samples at 2.5-foot-depth intervals in the drilled borings and screening the samples in the field for indicators of contamination;

- Installing one groundwater monitoring well in the northeastern corner soil boring (B-6, Figure 2);

- Chemically analyzing a single composite soil sample from each boring for Total Petroleum Hydrocarbon (TPH); and for EP Toxicity Metals (boring B-6 only);

- Collecting a groundwater sample from the monitoring well and analyzing for TPH and benzene, toluene, ethylbenzene, and xylene (BTEX), to assess the potential for migration of contamination off-site;

- Collecting and analyzing several samples of potential Asbestos-Containing Material (ACM) from the building; and

- Preparing this report presenting the findings of our work and recommendations as appropriate.

The report begins with a summary of significant findings from the work and related recommendations. More detailed discussion of site information follows the summary.

Figure 2 of the report is a site plan showing the prominent existing features of the building, boring locations, and photograph locations. Site photographs are provided in Appendix A. Appendix B presents the asbestos data results. Appendix C presents the boring logs and laboratory certificates of analysis are presented in Appendix D.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

Following is a summary of our findings and recommendations. The main body of the report should be consulted for expanded discussion and supporting data.

- The historical background search and agency file review did not reveal a significant potential for soil and

groundwater contamination as a result of past operations of industries that occurred on-site and near the site during the period of 1930 to 1988.

- No files (present or archived) were found at the Ecology's Northwest Regional Office or Headquarters Office under the name of Frank Kenney Toyota/Volvo or Truckweld.

- Our observations made during the site reconnaissance indicate that several sources of <u>potential</u> releases of petroleum products exist on the site. They are an underground storage tank holding waste oil, numerous hydraulic lifts, and two oil/water separator sumps. These areas required further evaluation using a soil boring/soil and groundwater sample analysis program.

- Some localized soil contamination with petroleum was detected in borings B-1 and B-2 (See Figure 2) which are located near the underground storage tank and one of the old hydraulic fluid lifts, respectively. The contamination appears to be limited to confined areas beneath the concrete floor of the building closest to the underground storage tank and the one hydraulic lift. The localized petroleum contamination could be either from leakage of the underground storage tank or the small underground hydraulic fluid reservoir in the vicinity. There was no indication of volatile hydrocarbon contamination based on the field screening conducted on each soil sample using an H-Nu

photoionizer. The results of the laboratory analysis of soil samples for TPH are summarized in Table 3.

- Groundwater quality in the monitoring well (B-6) is good based on the performed analyses for TPH and BTEX. The results of the groundwater analysis show no immediate impact to groundwater from petroleum products which could be attributed to the identified soil contamination.

- The current Washington State Department of Ecology (Ecology) Northwest Regional Office policy establishes a cleanup goal of 200 to 2,000 ppm for TPH contamination in soil related to tank leaks. This is not a written policy, but merely a guideline that Ecology refers to for evaluating tank cleanup projects. If or when the property is re-developed and involves excavation and grading, then the cleanup goals may be invoked by Ecology.

  Recommendation: Based on the age of the tank and the indication of soil contamination in the vicinity, we recommend that the underground storage tank be removed from the property to prevent the potential of leakage or releases to the environment. If there is evidence of leakage during tank removal, Ecology would have to be notified and informed of the removal and disposal activities for not only the tank but for associated piping and any contaminated soils. Verification sampling would also have to be performed.

- During the building walk-through evaluation, material on the old boiler furnace in the sub-basement (see Photograph 3, Appendix A), on an insulation-wrapped pipe, and from ceiling tiles were observed and suspected as being asbestos-containing material (ACM). Samples from these locations were collected and analyzed confirming that only the material around the old boiler furnace and associated piping is ACM.

  Recommendation: If the boiler unit and pipe are removed from the building, a certified asbestos abatement contractor should properly remove and dispose of the ACM. The analytical results of the samples collected are presented in Appendix B. Based on our site reconnaissance, we estimate that there is approximately 25 cubic feet of ACM around the boiler and associated piping. We also recommend the following steps to be taken prior to, during, and after removal:

  1. Request a copy of the removal specifications to be followed from the selected certified ACM abatement contractor.

  2. Request a copy of the company's list of certified asbestos personnel.

  3. Request documentation for the abatement work area confirming that all asbestos has been removed (room clearances), and no hazardous air concentrations of fibers persist in the room or adjacent areas.

4. Request a copy of a final report containing the documentation of removal, disposal, and clearance.

BACKGROUND SEARCH OF PROPERTY HISTORY

The history of land-use activities on and adjacent to the site was researched in order to identify potential sources of contamination for the property. The study area was defined as encompassing 8th and 9th Avenues between Aloha and Broad Streets. The following documents were reviewed: aerial photographs (H.G. Chickering, 1961; Pacific Aerial Surveys, 1965; and Washington Department of Natural Resources, 1970), topographic maps (U.S. Geological Survey, 1909, 1949, 1968 and 1968 photo-revised to 1973, and 1981), fire insurance maps (Sanborn, 1905, 1917, and 1917 corrected to 1950), county atlases (Kroll, 1926; and Metsker, 1926 and 1936) and city directories (R.L. Polk, 1920, 1925, 1928, 1930, 1935, 1940, 1943-44, 1948-49, 1955, 1960, 1963, 1968, 1973, 1978, 1983, and 1987). As noted from Sanborn maps and in city directories, listings of known on-site and adjacent businesses are presented in Tables 1 and 2.

Table 1 - Known On-site Businesses

Mack Trucks	701 9th Avenue N.	1930s-1940s
City Light Warehouse	701 9th Avenue N.	1950s-1960s
Jules Auto Repair	701 9th Avenue N.	1960s
Truckweld Warehouse	701 9th Avenue N.	1960s-1970s
Kenny Toyota-Volvo	701 9th Avenue N.	1980s

Table 2 - Known Adjacent Businesses

Lewis Jewelry Painting	739 9th Avenue N.	1980s
Accent Painting	739 9th Avenue N.	1980s
Multicraft Plastics	739 9th Avenue N.	1970s-1980s
Truckweld	739 9th Avenue N.	1930s-1970s
Hyster Trucks	753 9th Avenue N.	1940s-1950s
Studebaker Autos	753 9th Avenue N.	1960s
Scotts Toyota	753 9th Avenue N.	1960s
Harley-Davidson	753 9th Avenue N.	1970s
Burkhart Dental Supply	753 9th Avenue N.	1970s-1980s
Tavern	701 Westlake Avenue N.	1940s
Lithographers	703 Westlake Avenue N.	1940s
Auto Repair Shop	703 Westlake Avenue N.	1950s
Lithographers	703 Westlake Avenue N.	1960s
Kenny Toyota	703 Westlake Avenue N.	1960s-1970s
Aurora Horn Shop	703 Westlake Avenue N.	1980s
Video Only	703 Westlake Avenue N.	1980s
Art Marble	731 Westlake Avenue N.	1920s-1940s
Northwest Marble	731 Westlake Avenue N.	1940s-1960s
Kenny Toyota	731 Westlake Avenue N.	1970s-1980s
Scotts Toyota	736 Westlake Avenue N.	1960s
Kenny Toyota	736 Westlake Avenue N.	1970s
Westlake Marine Engines	740 Westlake Avenue N.	1940s
Diesel Service Co.	740 Westlake Avenue N.	1960s
Robinson Marble & Tile	600 8th Avenue N.	1920s
Nifty Costume	600 8th Avenue N.	1940s-1950s
Robinson Marble & Tile	610 8th Avenue N.	1930s
Schultz Auto Repair	613 8th Avenue N.	1930s
Fess Oil Service	613 8th Avenue N.	1950s
City Light Warehouse	706 8th Avenue N.	1920s-1980s
Northwest Marble	720 8th Avenue N.	1960s
City Light Garage	724 8th Avenue N.	1920s-1980s

Historic Land Use: On-site

Prior to 1910, the area of the site was submerged land of Lake Union. Filling of the area led to the opening of Westlake Avenue, which developed as a light industrial and commercial district. However, the site was undeveloped until a Mack Truck assembly plant was established in the late 1920s or early 1930s. Over the past fifty or sixty years since then, a variety of activities have occurred on-site, including warehousing by City Light and Truckweld, and auto repair and sales, including Frank Kenny Toyota-Volvo.

Historic Land Use: Adjacent Property

The character of adjacent development has been similar to that of the site. The major activity on adjacent property since the 1920s has been the presence of the Puget Sound Power & Light (now known as City Light) garage on the corner of 8th Avenue North and Roy Street (Figure 1). Other significant adjacent activity has occurred on the triangular shaped parcel east of the site between 9th and Westlake Avenues. The first known users of the parcel were a printing shop and laundry in the 1920 and 1930s. Between World War II and the 1960s, the property was used for auto body repair and painting, and tile manufacturing. Since the 1970s, however, the property has been used for auto sales.

AGENCY FILE REVIEW

Washington State Department of Ecology

Mary Kautz and Dorothy Milhollin of Ecology, Northwest Regional Office and Headquarters Office, respectively, were contacted for information concerning the property of interest. There were no current files (since 1978) at the Northwest Regional Office or archived files (prior to 1978) at the Headquarter Office under the name of Frank Kenney Toyota/Volvo or Truckweld.

SITE RECONNAISSANCE

Julie Wukelic and John Funderburk of Hart Crowser completed a site reconnaissance on December 5, 1988. The Frank Kenney Toyota/Volvo Property includes a single large building that houses a showroom, parking area, offices, and a large automobile service bay (see Figure 2). The service bay contains seventeen hydraulic lifts, two oil/water separator sumps, and an underground waste oil storage tank, partially visible in the sub-basement (see Photograph 1). Six of the hydraulic lifts are self- contained, five are single pistons, and six are double pistons with a hydraulic fluid reservoir container underneath the ground surface. The oil/water separator sumps are approximately 8 feet deep and were approximately one-quarter full of sludge, water, and debris during our site reconnaissance (see Photograph 4). But in early December 1988, a contractor hired by Frank Kenney Toyota/Volvo pumped out and removed the sludge

material in both sumps. It appears that the northwest sump drains toward the south while the northeast sump drains to the east. Based on a conversation with Mr. Jerry Kenney, it is believed that the sumps drain into the city storm drains.

We also observed a rubber pipe protruding out of the ground by about six inches on the adjacent property along the northern wall of the service bay (see Photograph 5). The purpose of this hose was unknown, but based on its appearance, the pipe could be connected to an unknown underground tank.

During our site reconnaissance of adjacent properties, the building to the north of the property contains an out-of-service overhead crane and bank of old electrical boxes. Some of these electrical boxes still contained labels stating welder station numbers. Therefore, it is assumed that welding most likely took place in this adjacent building.

SAMPLING AND ANALYSIS PROGRAM

Subsurface Soil Sampling

A total of six hand-auger borings, designated B-1 through B-6, were drilled on December 7 and 8, 1988, by Hart Crowser geologists. Borings were completed to design depths ranging from 7.5 to 10 feet below the ground surface. Two of the borings, B-5 and B-6, could not be advanced to design depths

by hand-augering due to the presence of gravel fragments and cobbles in the soil. On December 10, 1988, borings B-5 and B-6 were deepened to 14 feet and 16.5 feet, respectively, using a truck-mounted, Mobile B-61 drill rig equipped with a 6-1/4-inch I.D. hollow-stem auger for drilling through the gravel and cobbles. The drilling was accomplished under subcontract to Hart Crowser, and was observed by an experienced geologist from our firm.

Geologic logs of the borings are presented on Figures C-2 through C-5, and represent our interpretation of subsurface conditions, and drilling and soil sampling information. Representative soil samples from each 2.5-foot-depth interval were collected from cuttings in the hand-auger borings using a stainless-steel spoon. In the portions of borings B-5 and B-6 deepened by hollow-stem auger, samples were collected at 2.5-foot-depth intervals using a Standard Penetration Test (SPT) procedure described in ASTM D 1587. SPT samples were obtained by driving a 2-1/2-inch-diameter split-spoon a distance of 18 inches into the soil. The spoon is driven by a 140-pound hammer free-falling 30 inches for each blow. The number of blows required to drive the sampler the last 12 inches is the Standard Penetration Resistance (N). This resistance, or blow count, provides a measure of the relative density of granular soils and consistency of cohesive soils. Blow counts are plotted on each boring log at the respective sample depths.

Additionally, one composite sample from each boring was collected for laboratory analysis. The composite samples and the other soil samples were placed in airtight glass

jars, provided by Analytical Technologies, Inc. (ATI), labeled, and placed in coolers with ice. Composite samples were delivered in the coolers to ATI, with the remainder of the soil samples transferred to refrigerators at the Hart Crowser office.

Split-spoon samplers and stainless steel spoons were scrubbed clean with Alconox detergent and then rinsed with deionized water between samples. Hand-augering and hollow-stem augering equipment was cleaned in the sample manner between borings.

An H-Nu PI-101 photoionization meter with a 10.2 eV lamp was used to monitor levels of volatile organic compounds in the work areas around each boring and in the soil sample jars.

Soil Quality

All of the composite soil samples were chemically analyzed for TPH. The B-6 composite soil sample was also analyzed for EP Toxicity Metals because based on the historical background search (Truckweld Warehouse) and our site reconnaissance, we assumed that welding most likely occurred on the property adjacent to the north. The boring logs and certificates of analysis are presented in Appendix C and D, respectively. Table 3 presents the results of soil quality analysis.

The data from Borings B-1 through B-4 indicate the subsurface soil conditions contain some localized petroleum contamination, possibly resulting from leakage of the

underground waste oil storage tank or a hydraulic fluid reservoir. Subsurface soil conditions at borings B-5 and B-6 indicate no petroleum contamination based on the sampling data. The EP Toxicity metal analyses indicate that the metal concentrations at boring B-6 are near or below what would be background levels.

Table 3 - Subsurface Soil Quality Analysis and EP Toxicity Metals

			Concentrations in parts per million (ppm)							
Sample	Date	TPH	Ar	Ba	Cd	Cr	Pb	Hg	Se	Ag
B-1	12/7	670	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
B-2	12/7	1,200	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
B-3	12/7	130	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
B-4	12/7	50	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
B-5	12/8	<1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
B-6	12/8	<1	<0.005	0.19	0.03	<0.005	<0.1	<0.0005	<0.005	<0.02

Groundwater Sampling

A groundwater monitoring well was installed in boring B-6 on December 10, 1988. The water level in the well was noted during drilling to determine the depth of well screen installation. Two-inch-diameter, flushed-threaded schedule 80 PVC pipe with a 5-foot screen section was then installed to a depth of approximately 2 feet below the observed water level. The well screen section consists of 0.020-inch

slots. The backfill material around the screen consists of clean, No. 16 Monterey sand and extends 2.7 feet above the top of the well screen.

The well installation was sealed with volclay grout through the auger from the top of the sand pack to a height near the ground surface. The top of the well was encased with locking 4-inch-diameter steel monuments set in ready-mix cement and flush-mounted in the sidewalk.

A groundwater sample was collected from the monitoring well by Hart Crowser on December 13, 1988, after well development (sediment in well removed). Prior to sampling, the well was bailed with a clean, stainless-steel bailer using polypropylene line. Five casing volumes of water were purged to allow fresh groundwater to enter the well. Purge water was discarded on the ground at the site. A measurement of depth to groundwater was taken in the monitoring well using an electric well sounder. The reference measuring point was the top of the PVC casing.

From the bailer, the collected water sample was poured into two 1/2-gallon amber glass bottles with no preservative, a 250-ml plastic bottle with no preservative, and two 40-ml glass bottles with no preservative. A separate sample was pumped from the bailer using a peristaltic pump through a 0.45 micron filter into a 250-ml plastic bottom with nitric acid preservative. All bottles were provided by Laucks Testing Laboratories, Inc. The samples were immediately placed on ice for transport to Laucks Testing Laboratories, Inc.

Groundwater Quality

The collected groundwater sample from B-6 was submitted to Laucks Testing Laboratories, Inc., for chemical analysis. It was tested for TPH and BTEX. These data indicated concentrations of TPH and BTEX in the sample are at or below the detection limits for the testing methods. These results indicate good water quality for the parameters analyzed. The data are summarized in Table 4. This finding indicates that petroleum hydrocarbon contamination in soil assessed in borings B-1 through B-6 has not impacted the site ground water to the extent that it is presently migrating off the property.

Table 4 - Groundwater Quality Analysis

Well No.	Sample Date	TPH in ppm	BTEX Concentration in ppb			
			Benzene	Toluene	Ethylbenzene	Xylene
B-6	12/13/88	<0.5	<1.0	<1.0	<1.0	<2.0

ppm = Parts per million or milligrams per liter.
ppb = Parts per billion or micrograms per liter.

Asbestos Sampling

During our site reconnaissance, we observed suspected asbestos-containing material (ACM) around the old boiler unit and associated piping in the sub-basement, in ceiling tile in the sub-basement, and on a wrapped pipe near the waiting room. We took samples of the materials and analyzed them for bulk asbestos content. The results of the analysis confirming ACM in the insulation around the old boiler unit and the associated piping in the sub-basement are presented in Table B-1. The ceiling tile was determined not to be ACM. If the boiler unit and piping are demolished it is estimated that approximately 25 cubic feet of ACM should be removed and disposed of properly from them before demolition. It is recommended that a certified asbestos abatement contractor should be obtained to perform and document this removal and disposal activity.

We trust that this report meets your needs. If you have additional questions or if we can be of assistance, please call at your earliest convenience.

Sincerely,

HART CROWSER, INC

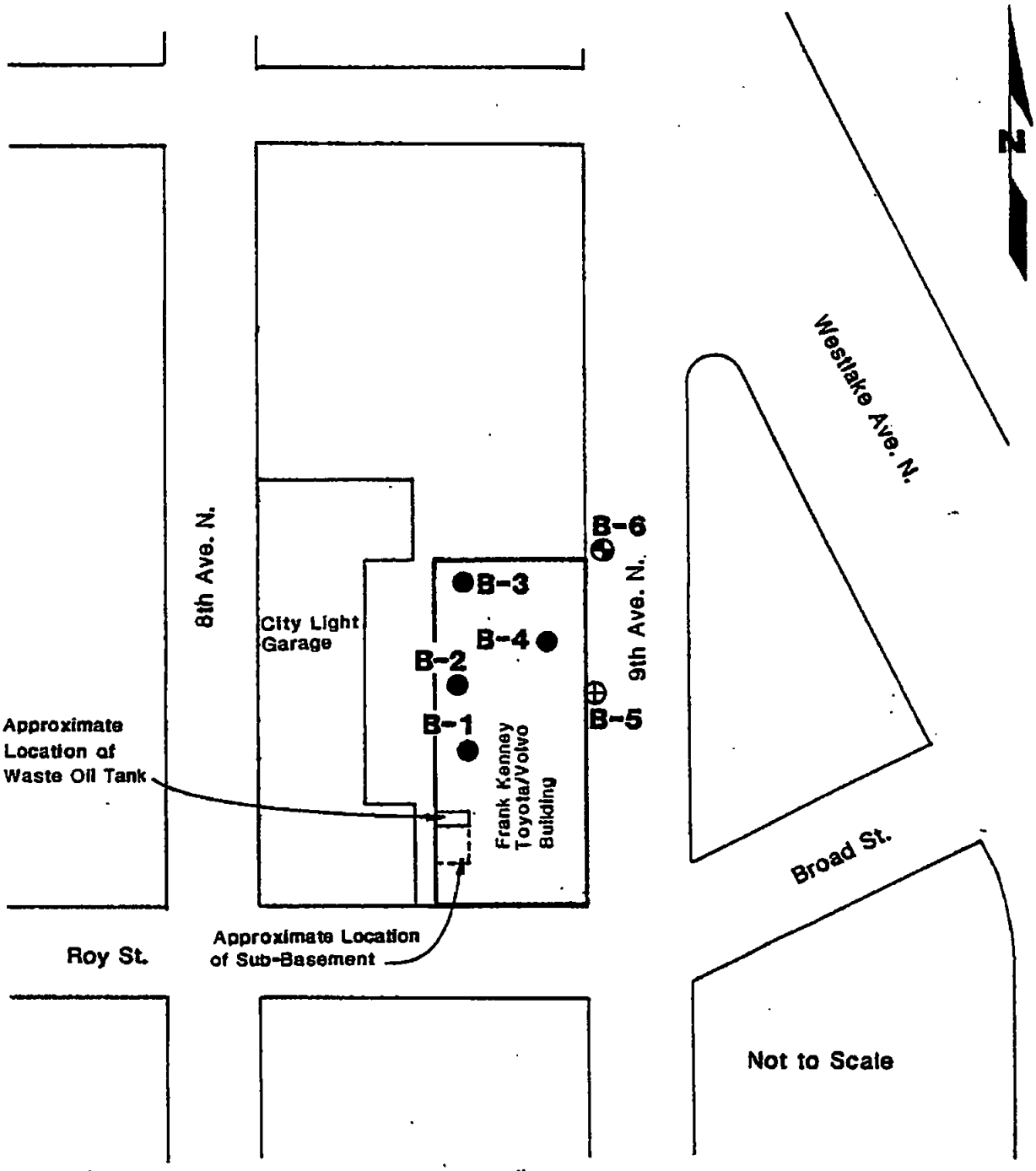
JULIE K. W. WUKELIC
Project Environ. Engineer

JOHN R. FUNDERBURK, III, MSPH
Manager of Environmental
Site Assessments

JKWW/JRF:akw/sek
LR2295/JOBS

Attachments: Figure 1 - Site Plan
Figure 2 - Frank Kenney Toyota/Volvo Building
Appendix A - Site Reconnaissance Photographs
Appendix B - Asbestos Sampling Results
Appendix C - Boring Logs
Appendix D - Certificates of Analysis

Site Plan



Base map prepared from drawing entitled "Lake Union Shore Lands Unrec. 800 9th Ave. N.", by Stewart Title Company, undated.

● B-1 Hand-Auger Boring

⊕ B-5 Drill Rig-Auger Boring

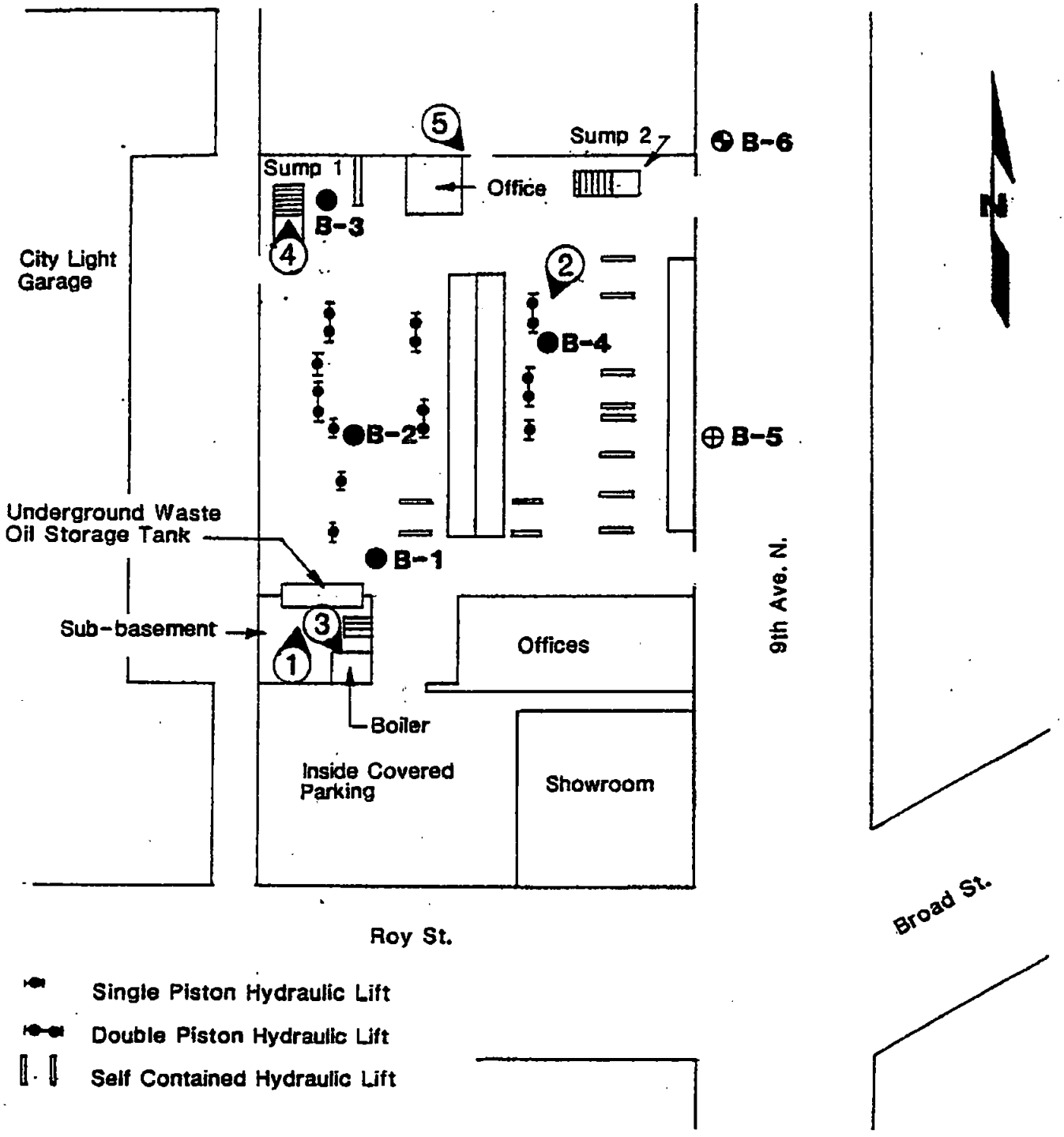
◒ B-6 Monitoring Well

HARTCROWSER

J-2295 12/88

Figure 1

Frank Kenney Toyota/Volvo Building



NOT TO SCALE

HARTCROWSER

J-2295 12/88

Figure 2

Photo 1 Partially buried underground storage tank, located in sub-basement.

Photo 2 Hydraulic lifts in middle of building, look southwest.

Photo 3 Boiler containing ACM in southeast corner of sub-basement, looking southeast.

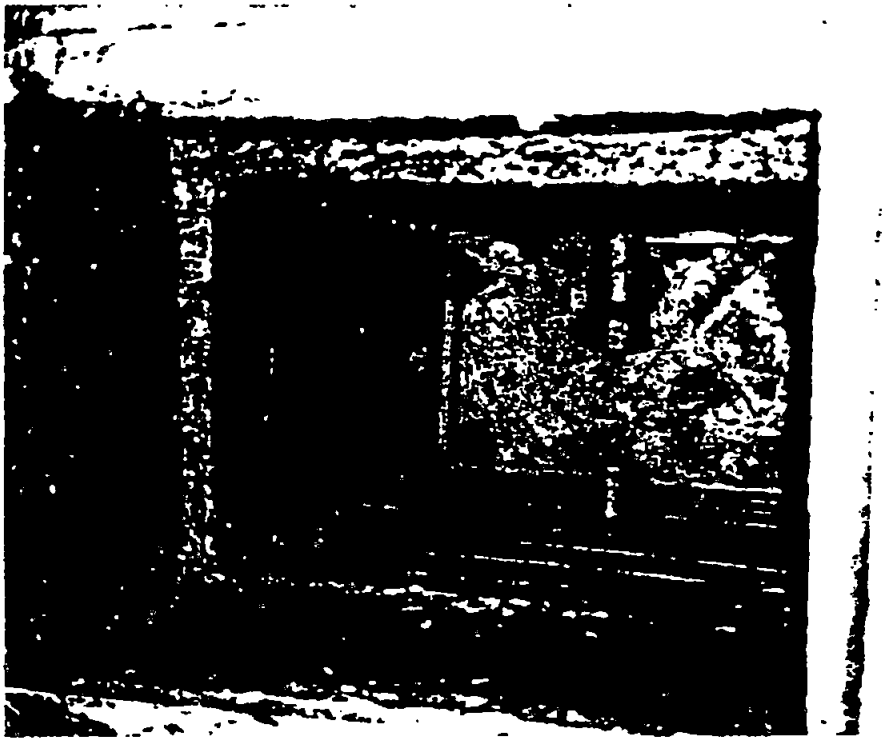


Photo 4 Sump No. 1 located in northwest corner of building, looking down.

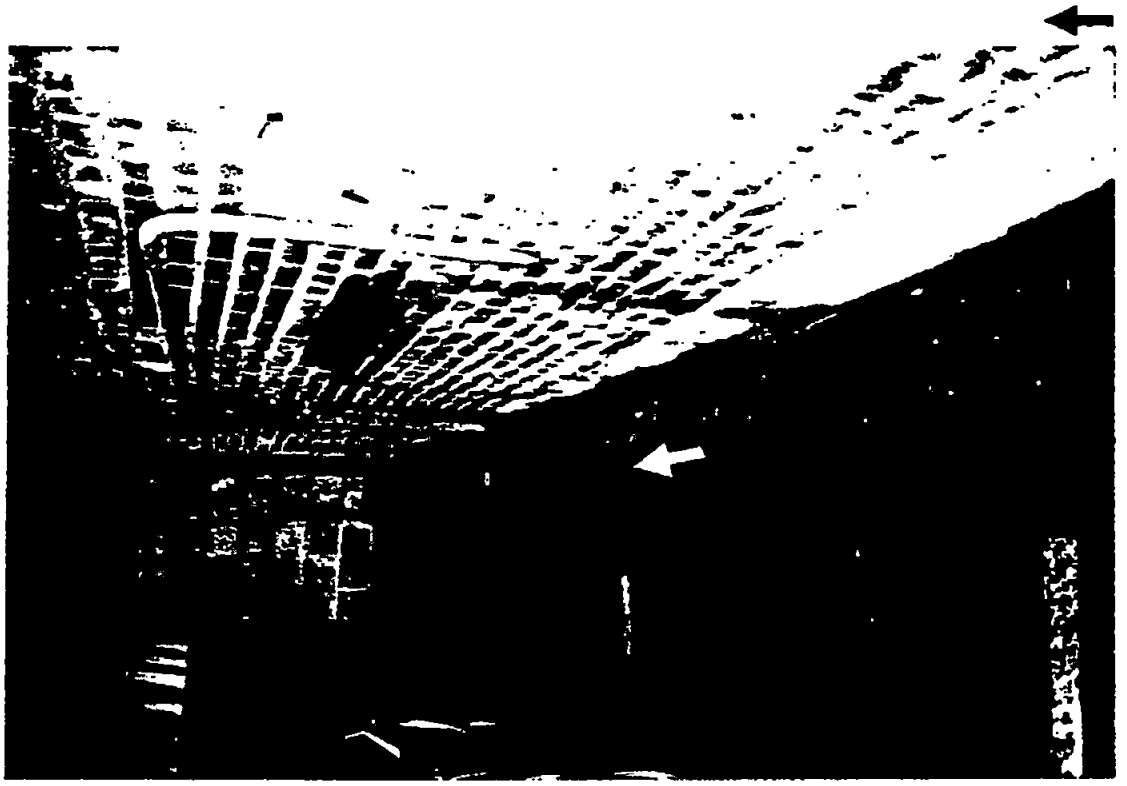


Photo 5 Protruding rubber pipe, outside of building near northern wall.

Laucks 80 YEARS
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Certificate

Chemistry, Microbiology, and Technical Services

CLIENT: Hart Crowser, Inc.
1910 Fairview Ave. E.
Seattle, WA 98102-3699
ATTN: James Herndon

LABORATORY NO. 13578

DATE: Dec. 21, 1988

Job No. 2295

REPORT ON: WATER

SAMPLE IDENTIFICATION: Submitted 12/13/88 and identified as shown below:

B-6/S-1 12/13/88 15:00

TESTS PERFORMED AND RESULTS:

	Sample	Method Blank
	parts per million (mg/L)	
Total Petroleum Hydrocarbons Oil & Grease	<0.5	<0.5
	parts per billion (ug/L)	
Benzene	<1.	<1.
Toluene	<1.	<1.
Ethylbenzene	<1.	<1.
Xylene	<2.	<2.

Key

< indicates "less than"

Respectfully submitted,

Laucks Testing Laboratories, Inc.

J. M. Owens

JMO:emt

Laucks 80 years
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Certificate

Chemistry Microbiology and Technical Services

APPENDIX A

Surrogate Recovery Quality Control Report

Attached is a surrogate (chemically similar) compound utilized in the analysis of organic compounds. The surrogate is added to every sample prior to extraction and analysis to monitor for matrix effects, purging efficiency, and sample processing errors. The control limits represent the 95% confidence interval established in our laboratory through repetitive analysis of these sample types.

JOB No. 13578 DATE: 12/20/88

Sample No. B1219GV0.WA1 Matrix: Water Analysis: GC-PID

Surrogate Compound	Percent Recovery	Comment	Control Limits
n-propylbenzene	97		87 - 113

Sample No. 1 Matrix: Water Analysis: GC-PID

Surrogate Compound	Percent Recovery	Comment	Control Limits
n-propylbenzene	97		87 - 113

Laucks 80 years
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Certificate

Chemistry Microbiology and Technical Services

APPENDIX B

Copy of Chain-of-Custody is Attached

Sample Custody Record

DATE 12/13/88 PAGE 1 OF 1

HARTCROWSER

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699

JOB NUMBER 2295 LAB NUMBER

PROJECT MANAGER J. Wukelic

PROJECT NAME Frank Kenney

SAMPLED BY: T. Walker

LAB NO.	SAMPLE	TIME	STATION	MATRIX	TESTING: TPH	TESTING: BTEX	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
1	B-6/3-1	15:00		Water	X		1	1 week turnaround per Barbara
2	B-6/3-1	15:00		"		X	2	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
Signature: Tim Walker	12/13	Signature:	
Printed Name: Tim Walker	TIME	Printed Name:	TIME
Company: Hart Crowser	16:00	Company:	
RELINQUISHED BY	**DATE**	**RECEIVED BY**	**DATE**
Signature:		Signature: [illegible]	12-13
Printed Name:	TIME	Printed Name: [illegible]	TIME
Company:		Company: [illegible]	16:00

TOTAL NUMBER OF CONTAINERS: 3

METHOD OF SHIPMENT: Hand Deliver

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS: Keep Cool

DISTRIBUTION:

1. PROVIDE WHITE AND YELLOW COPIES TO LABORATORY
2. RETURN PINK COPY TO PROJECT MANAGER
3. LABORATORY TO FILL IN SAMPLE NUMBER AND SIGN FOR RECEIPT
4. LABORATORY TO RETURN WHITE COPY TO HART CROWSER

Analytical Technologies, Inc.

ATI I.D. # 8812-050

SAMPLE CROSS REFERENCE SHEET

CLIENT : HART CROWSER, INC.
PROJECT # : 2295
PROJECT NAME : -

ATI #	CLIENT DESCRIPTION	MATRIX	DATE SAMPLED
8812-050-1	B1	SOIL	12/09/88
8812-050-2	B2	SOIL	12/09/88
8812-050-3	B3	SOIL	12/09/88
8812-050-4	B4	SOIL	12/09/88

----- TOTALS -----

MATRIX	# SAMPLES
SOIL	4

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ATI I.D. # 8812-050

ANALYTICAL SCHEDULE

CLIENT : HART CROWSER, INC.
PROJECT # : 2295
PROJECT NAME : -

ANALYSIS	TECHNIQUE	REFERENCE/METHOD
PETROLEUM HYDROCARBONS	IR	EPA 418.1

Analytical Technologies, Inc.

ATI I.D. # 8812-050

GENERAL CHEMISTRY RESULTS

CLIENT : HART CROWSER, INC. SAMPLE MATRIX : SOIL
PROJECT # : 2295
PROJECT NAME : -

PARAMETER	UNITS	-1	-2	-3	-4
PETROLEUM HYDROCARBONS	mg/Kg	670	1,200	130	50

Analytical Technologies, Inc.

ATI I.D. # 8812-050

GENERAL CHEMISTRY QUALITY CONTROL

CLIENT : HART CROWSER, INC. SAMPLE MATRIX : SOIL
PROJECT # : 2295
PROJECT NAME : -

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED CONC	SPIKE ADDED	% REC
PETROLEUM HYDROCARBONS	mg/Kg	8812-053-1	2,500	2,500	0	N/A	N/A	N/A
PETROLEUM HYDROCARBONS	mg/Kg	8812-049-1	N/A	N/A	N/A	38.1	37	103

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

ATI I.D. # 8812-057

SAMPLE CROSS REFERENCE SHEET

CLIENT : HART CROWSER, INC.
PROJECT # : J-2295
PROJECT NAME : -

ATI #	CLIENT DESCRIPTION	MATRIX	DATE SAMPLED
8812-057-1	B-5 COMPOSITE	SOIL	12/12/88
8812-057-2	B-6 COMPOSITE	SOIL	12/12/88

----- TOTALS -----

MATRIX	# SAMPLES
SOIL	2

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ATI I.D. # 8812-057

ANALYTICAL SCHEDULE

CLIENT : HART CROWSER, INC.
PROJECT # : J-2295
PROJECT NAME : -

ANALYSIS	TECHNIQUE	REFERENCE/METHOD
ARSENIC	AA/GF	EPA 7060
BARIUM	AA/F	EPA 7080
CADMIUM	AA/F	EPA 7130
CHROMIUM	AA/F	EPA 7190
LEAD	AA/F	EPA 7420
MERCURY	AA/COLD VAPOR	EPA 7470
SELENIUM	AA/GF	EPA 7740
SILVER	AA/F	EPA 7760
PETROLEUM HYDROCARBONS	IR	EPA 418.1

Analytical Technologies, Inc.

ATI I.D. # 8812-057

EP TOX
METALS RESULTS

CLIENT	: HART CROWSER, INC.	SAMPLE MATRIX	: SOIL
PROJECT #	: J-2295		
PROJECT NAME	: -	UNITS	: mg/L

PARAMETER	-1
ARSENIC	<0.005
BARIUM	0.19
CADMIUM	0.03
CHROMIUM	<0.005
LEAD	<0.1
MERCURY	<0.0005
SELENIUM	<0.005
SILVER	<0.02

Analytical Technologies, Inc.

ATI I.D. # 8812-057

EP TOX
METALS QUALITY CONTROL

CLIENT : HART CROWSER, INC.
PROJECT # : J-2295
PROJECT NAME : -

SAMPLE MATRIX : SOIL
UNITS : mg/L

COMPOUND	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
ARSENIC	8812-022-3	<0 005	<0.005	0	0.051	0.050	102
BARIUM	8812-057-2	0.19	0.17	11	18.1	20.0	90
CADMIUM	8812-057-2	0.03	0.03	0	0.53	0.50	100
CHROMIUM	8812-023-17	0.028	0.027	4	0.086	0.050	116
LEAD	8812-064-8	<0.1	<0.1	0	10.3	10.0	103
MERCURY	8812-057-2	<0.0005	<0.0005	0	0.0019	0.0020	95
SELENIUM	8812-057-2	<0.005	<0.005	0	0.052	0.050	104
SILVER	8812-057-2	<0.02	<0.02	0	1.03	1.00	103

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

ATI I.D. # 8812-057

GENERAL CHEMISTRY RESULTS

CLIENT : HART CROWSER, INC. SAMPLE MATRIX : SOIL
PROJECT # : J-2295
PROJECT NAME : -

PARAMETER	UNITS	-1	-2
PETROLEUM HYDROCARBONS	mg/Kg	<1.0	<1.0

Analytical Technologies, Inc.

ATI I.D. # 8812-057

GENERAL CHEMISTRY QUALITY CONTROL

CLIENT : HART CROWSER, INC. SAMPLE MATRIX : SOIL
PROJECT # : J-2295
PROJECT NAME : -

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED CONC	SPIKE ADDED	% REC
PETROLEUM HYDROCARBONS	mg/Kg	8812-046-6	58,000	58,000	0	N/A	N/A	N/A
PETROLEUM HYDROCARBONS	mg/Kg	SRB SPIKE	N/A	N/A	N/A	36.7	37	99

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

560 Naches Avenue, S.W., Suite 101, Renton, WA 98055

48hrs

Chain of Custody

DATE 12/12/88 PAGE 1 OF 1

PROJ. MGR. [illegible]
COMPANY Hart Crowser
ADDRESS 1910 Fairview Ave E
Seattle, WA 98102 3699

SAMPLERS (SIGNATURE) (PHONE NO.)

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	BASE/NEU/ACID CMPDS. GC/MS/ 625/8270	VOLATILE CMPDS. GC/MS/ 624/8240	PESTICIDES/PCB 608/8080	POLYNUCLEAR AROMATIC 610/8310	PHENOLS, SUB PHENOLS 604/8040	HALOGENATED VOLATILES 601/8010	AROMATIC VOLATILES 602/8020	TOTAL ORGANIC CARBON 415/9060	TOTAL ORGANIC HALIDES 9020	PETROLEUM HYDROCARBONS 418	FUEL HYDROCARBONS 8015		PRIORITY POLLUTANT METALS (13)	CAM METALS (18) TTLC/STLC	EP TOX METALS (8)	SWDA-INORGANICS PRIMARY/SECONDARY	HAZARDOUS WASTE PROFILE				NUMBER OF CONTAINERS
B-1 [illegible]	12/12/88	1130	soil	-1										✓											1
B-1 composite	12/12/88	1430	soil	-2										✓					✓						1

PROJECT INFORMATION	
PROJECT:	322.15
PO NO.	
SHIPPING ID. NO.	
VIA:	

SAMPLE RECEIPT	
TOTAL NO. OF CONTAINERS	2
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	✓
CONFORMS TO RECORD	✓
LAB NO.	88-12-057

SPECIAL INSTRUCTIONS/COMMENTS:
Both composited samples received 12/12/88. 2 coolers
Keep cool

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
(Signature) [illegible] (Time) 1015	(Signature) (Time)	(Signature) (Time)
(Printed Name) Richard F. Hart (Date) 12/12/88	(Printed Name) (Date)	(Printed Name) (Date)
(Company) Hart Crowser	(Company)	(Company)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
(Signature) (Time)	(Signature) (Time)	(Signature) Allen Filipowicz (Time) 10:55
(Printed Name) (Date)	(Printed Name) (Date)	(Printed Name)
(Company)	(Company)	ANALYTICAL TECHNOLOGIES, INC.

ATI LABORATORIES: SAN DIEGO (619) 458-9141 • PHOENIX (602) 438-1530 • SEATTLE (206) 228-8335 DISTRIBUTION: WHITE, CANARY - ANALYTICAL TECHNOLOGIES, INC. • PINK - ORIGINATOR

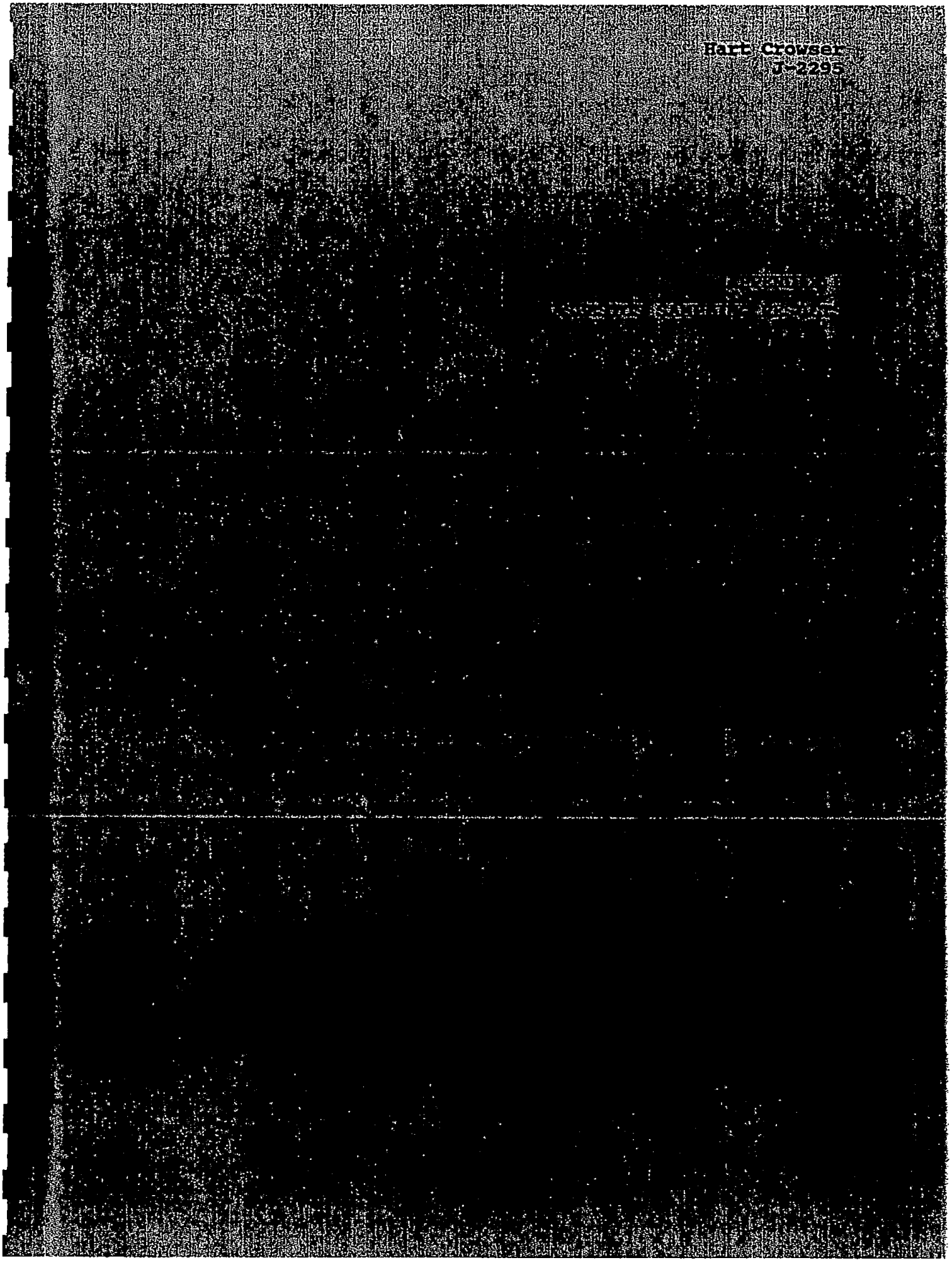
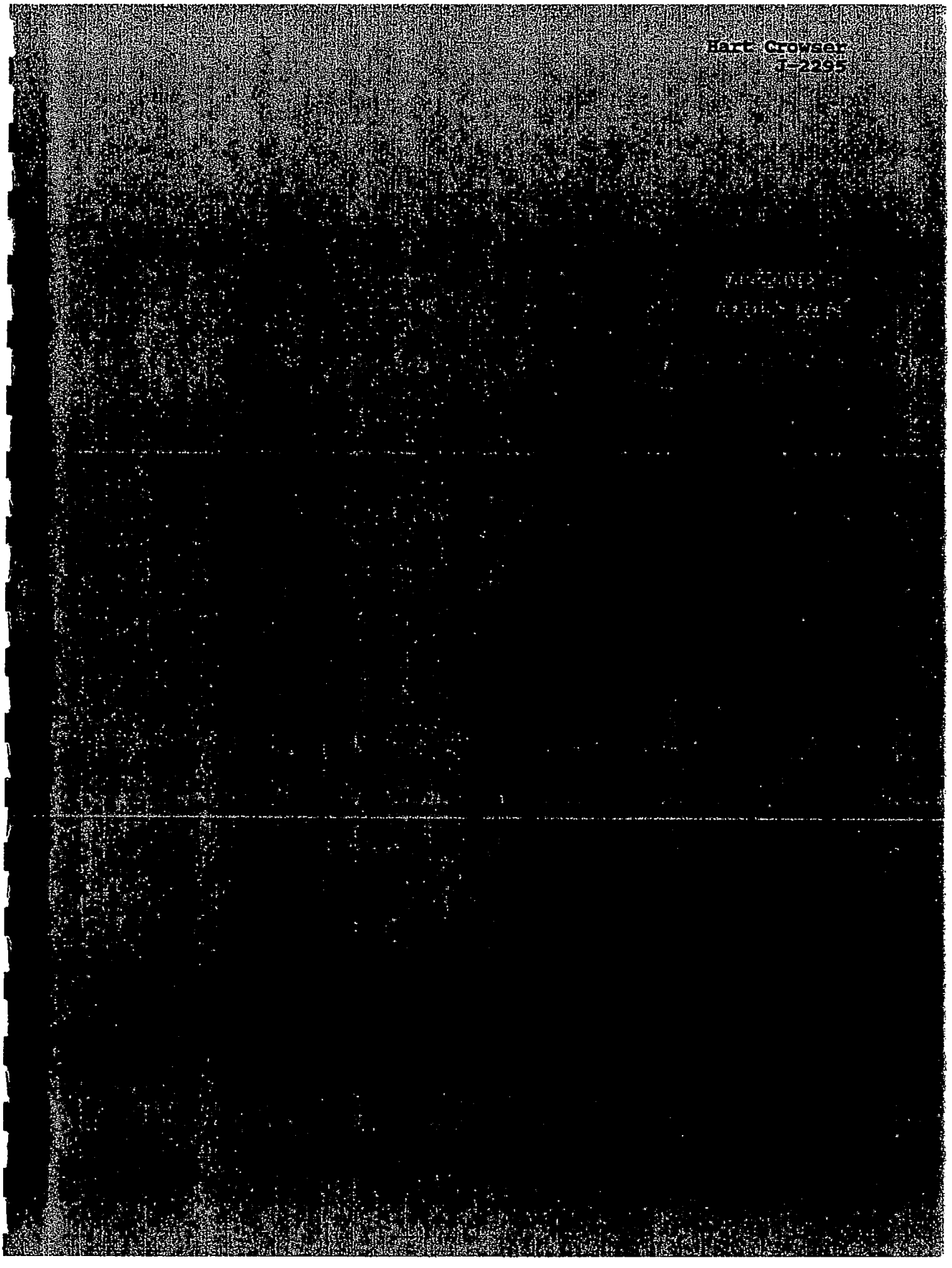

Bart Crowser
J-2295

Table B-1 - Summary of Asbestos Sampling Results

Sample Number	Description	Result
S-1	Package of Ceiling Tiles	N/D
S-2	Steam Pipe Wrap - South Parking Lot (near waiting room)	N/D
S-3	Boiler Jacket - sub-basement	20 percent chrysotile

N/D = not detectable



Key to Exploration Logs

Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:
Density/consistency, moisture, color, minor constituents, MAJOR CONSTITUENT, additional remarks.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits is estimated based on visual observation and is presented parenthetically on the test pit logs.

SAND or GRAVEL Density	Standard Penetration Resistance in Blows/Foot	SILT or CLAY Consistency	Standard Penetration Resistance in Blows/Foot	Approximate Shear Strength in TSF
Very loose	0 - 4	Very soft	0 - 2	<0.125
Loose	4 - 10	Soft	2 - 4	0.125 - 0.25
Medium dense	10 - 30	Medium stiff	4 - 8	0.25 - 0.5
Dense	30 - 50	Stiff	8 - 15	0.5 - 1.0
Very dense	>50	Very stiff	15 - 30	1.0 - 2.0
		Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture
Damp	Some perceptible moisture, probably below optimum
Moist	Probably near optimum moisture content
Wet	Much perceptible moisture, probably above optimum

Minor Constituents

	Estimated Percentage
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

Legends

Sampling

BORING SAMPLES

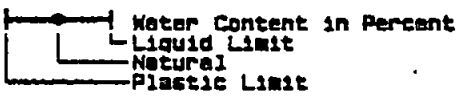
- Split Spoon
- Shelby Tube
- Cuttings
- Core Run
- * No Sample Recovery
- P Tube Pushed, Not Driven

TEST PIT SAMPLES

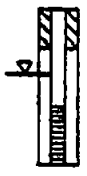
- Grab (Jar)
- Bag
- Shelby Tube

Test Symbols

GS	Grain Size Classification
CN	Consolidation
TUU	Triaxial Unconsolidated Undrained
TCU	Triaxial Consolidated Undrained
TCD	Triaxial Consolidated Drained
QU	Unconfined Compression
DS	Direct Shear
K	Permeability
PP	Pocket Penetrometer Approximate Compressive Strength in TSF
TV	Torvane Approximate Shear Strength in TSF
CBR	California Bearing Ratio
MD	Moisture Density Relationship
AL	Atterberg Limits



Ground Water Observations



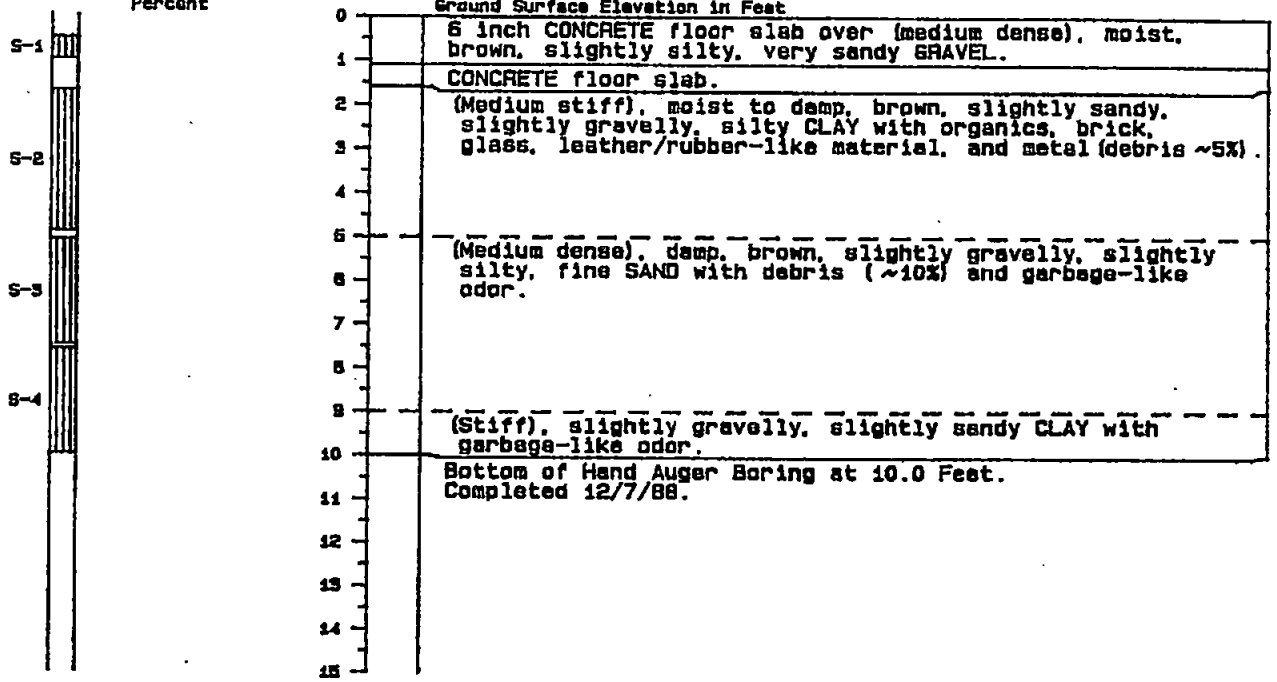
Surface Seal

Ground Water Level on Date (ATD) At Time of Drilling

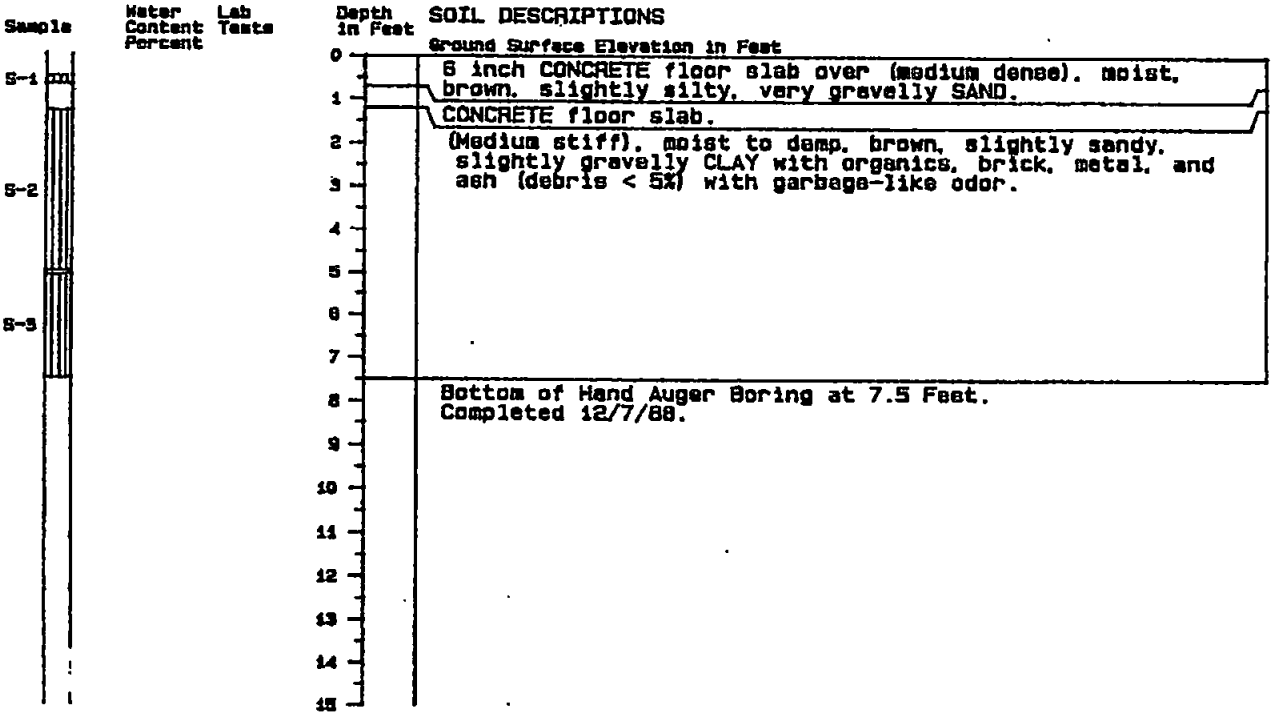
Observation Well Tip or Slotted Section

Ground Water Seepage (Test Pits)

Hand Auger Boring Log B-1

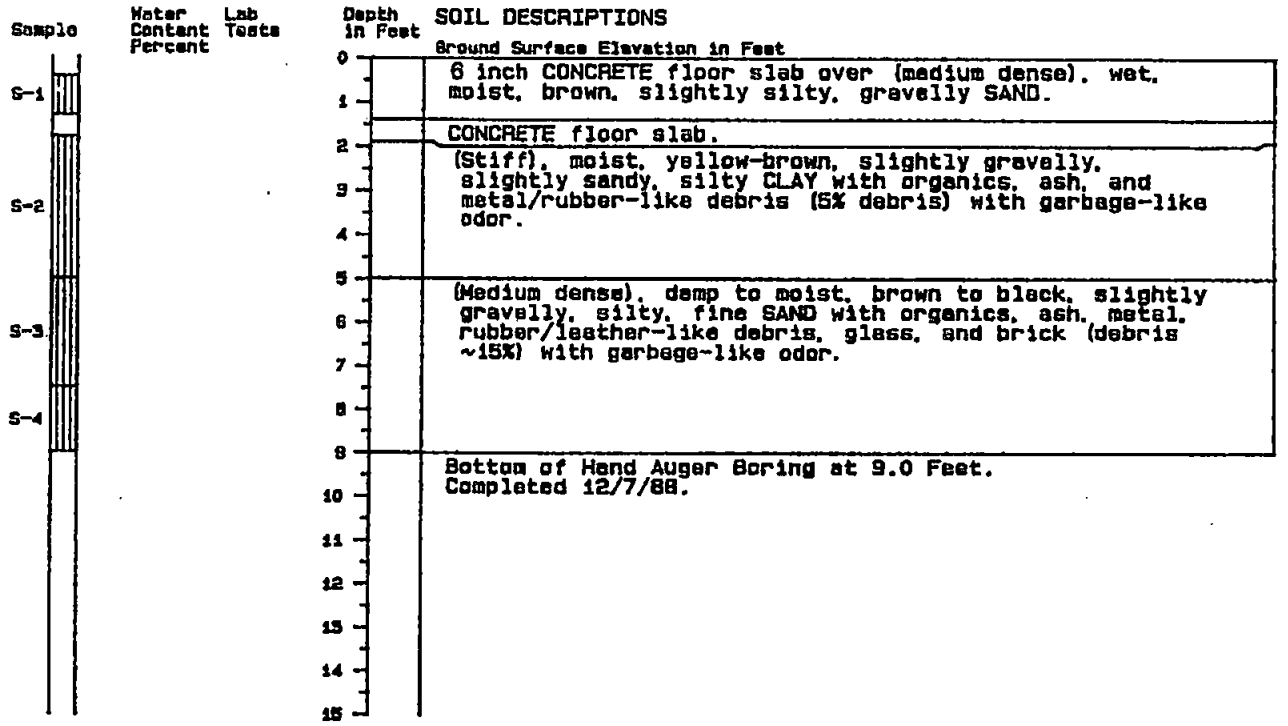


Hand Auger Boring Log B-2

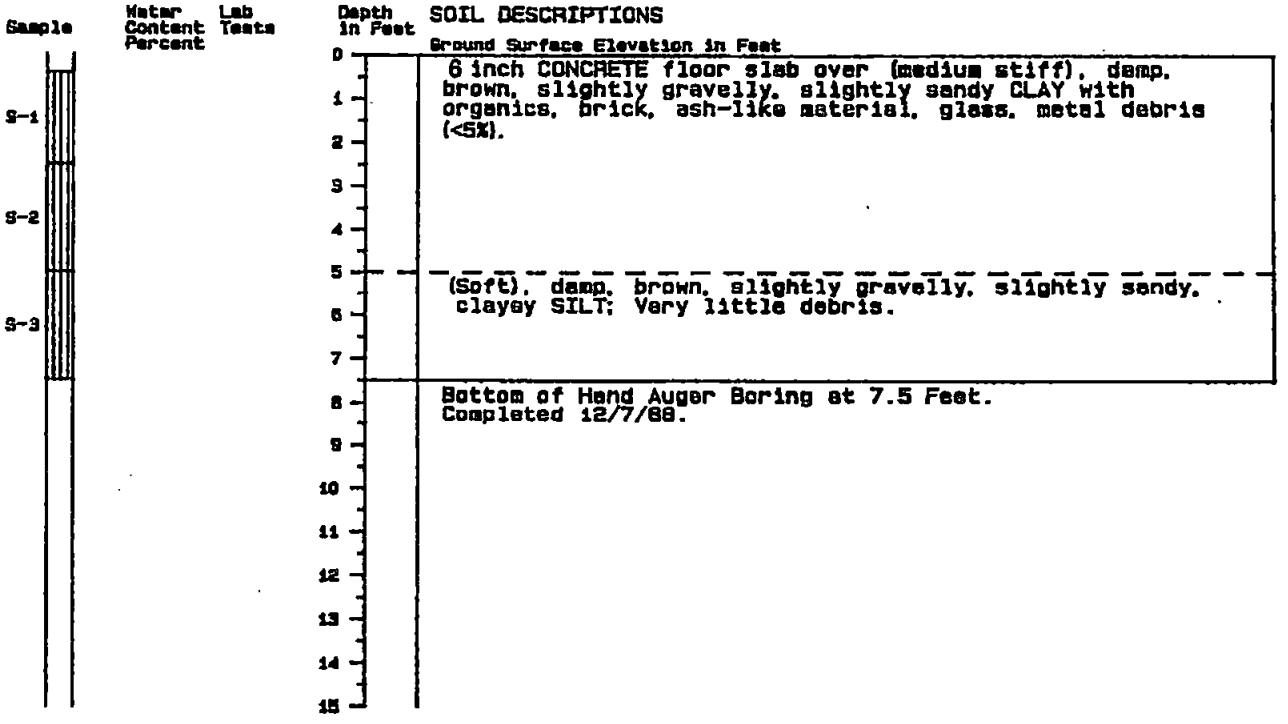


1. Refer to Figure C-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water conditions, if indicated, are at time of excavation. Conditions may vary with time.

Hand Auger Boring Log B-3



Hand Auger Boring Log B-4



1. Refer to Figure C-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water conditions, if indicated, are at time of excavation. Conditions may vary with time.

J-2295 December 1988
HART-CROWSER & associates, inc.
Figure C-3

Boring Log B-5

SOIL DESCRIPTIONS

Ground Surface Elevation in Feet

CONCRETE slab.

Few brick fragments.

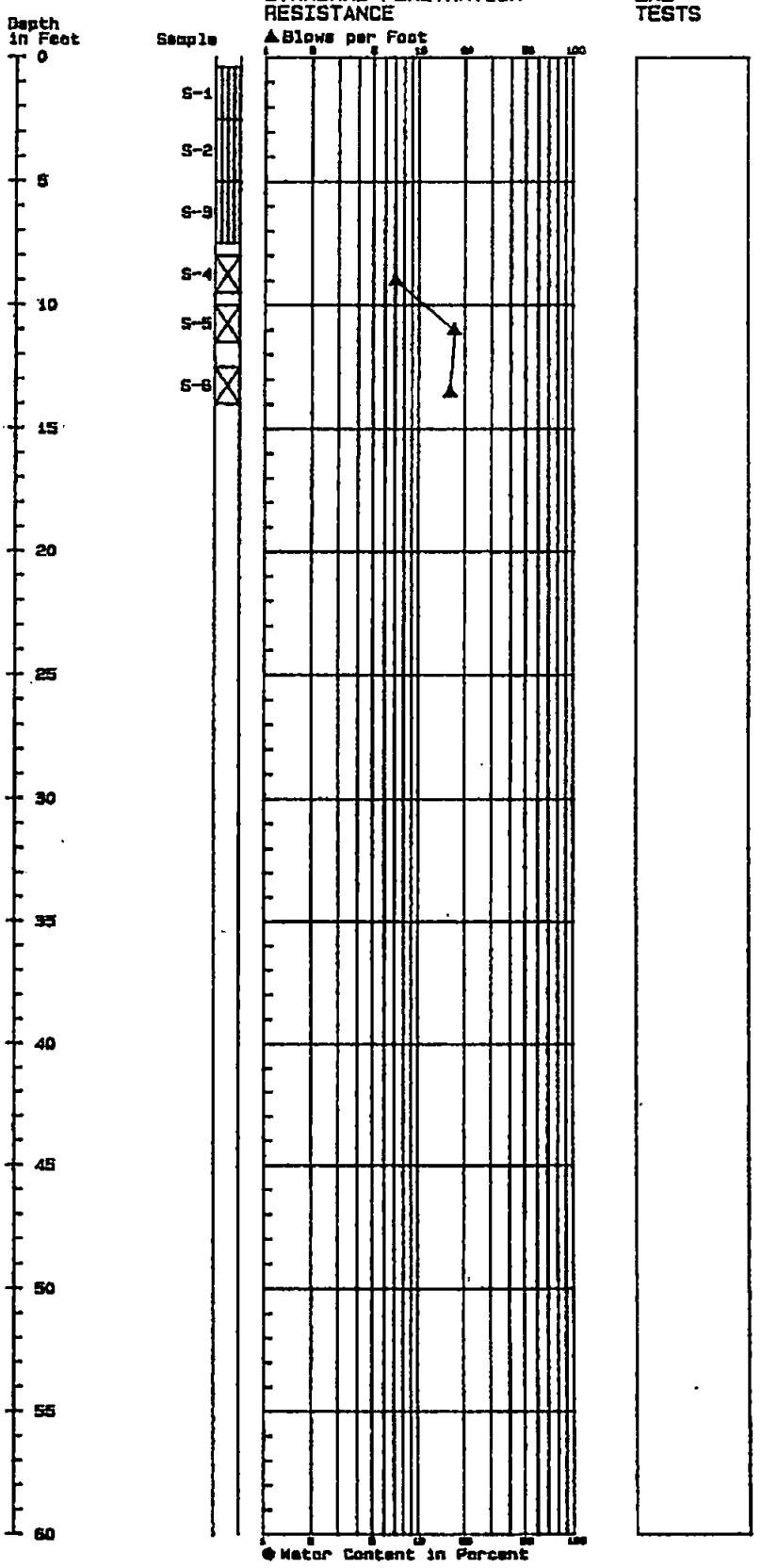
Loose to medium dense, moist, brown, gravelly to slightly gravelly, very silty to slightly silty, fine to medium SAND. (FILL)

Chunks of silty, gravelly, fine to SAND.

Medium dense, moist, gray to light brown, slightly silty, gravelly SAND and interbedded mottled light brown and reddish brown, fine sandy SILT.

Bottom of Boring at 14.0 Feet.
Completed 12/20/88.

Note: Upper portion drilled with hand auger which met refusal at 8-foot-depth. Drilled lower portion with hollow-stem auger drilling rig with split-spoon sampler.



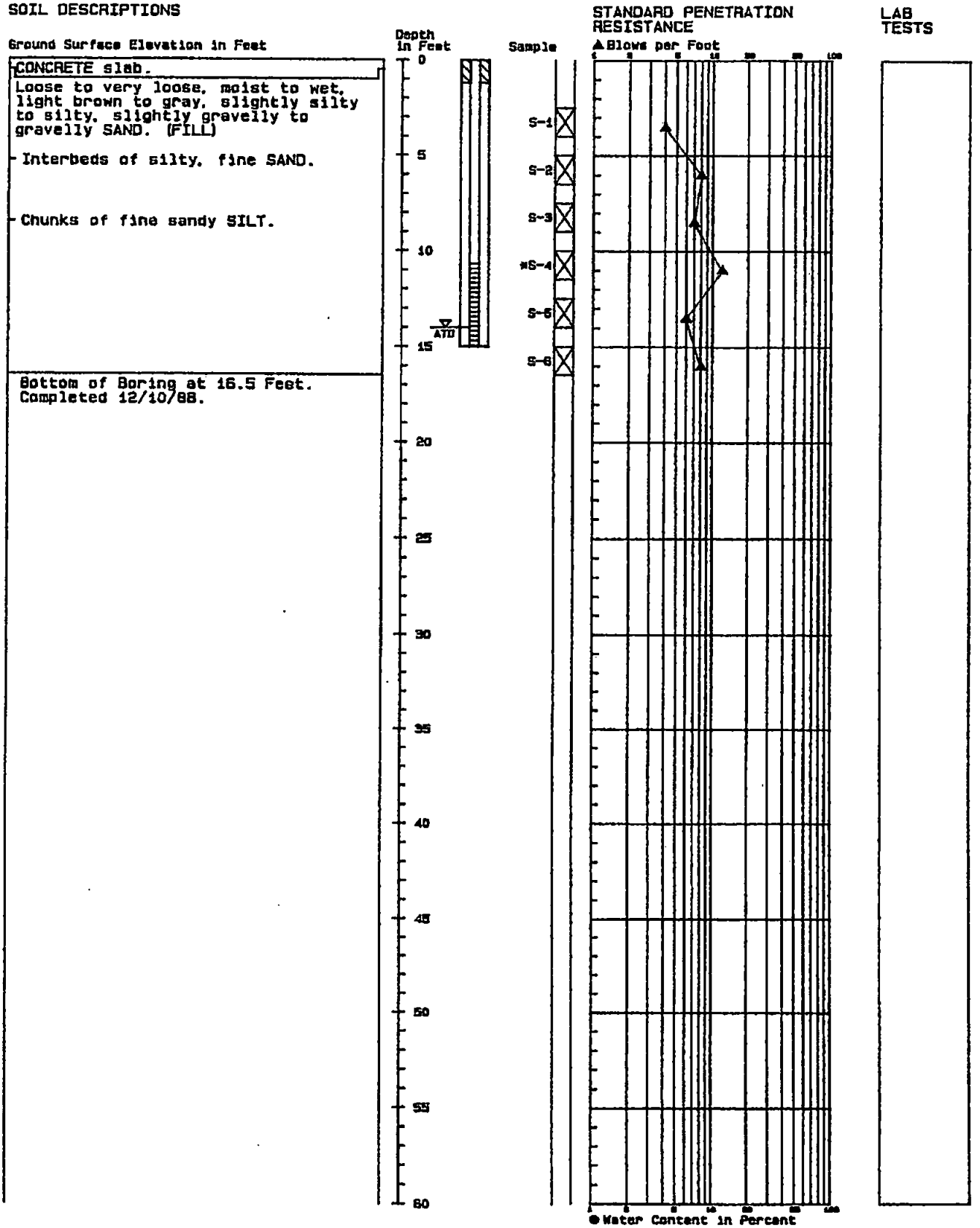
1. Refer to Figure C-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

J-2295 December 1988

HART-CROWSER & associates, inc.

Figure C-4

Boring Log B-6



1. Refer to Figure C-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

J-2295 December 1988

HART-CROWSER & associates, inc.

Figure C-5

APPENDIX E

SIMPLIFIED TERRESTRIAL ECOLOGICAL EVALUATION

Table 749-1

[PDF Version]

Simplified Terrestrial Ecological Evaluation-Exposure Analysis Procedure

Estimate the area of contiguous (connected) undeveloped land on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre).	
1) From the table below, find the number of points corresponding to the area and enter this number in the field to the right.	4
Area (acres) / Points 0.25 or less / 4 0.5 / 5 1.0 / 6 1.5 / 7 2.0 / 8 2.5 / 9 3.0 / 10 3.5 / 11 4.0 or more / 12	
2) Is this an industrial or commercial property? If yes, enter a score of 3. If no, enter a score of 1	3
3)[a] Enter a score in the box to the right for the habitat quality of the site, using the following rating system[b]. High=1, Intermediate=2, Low=3	1
4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2.[c]	2
5) Are there any of the following soil contaminants present: Chlorinated dioxins/furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.	4
6) Add the numbers in the boxes on lines 2-5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified evaluation may be ended.	10

Notes for Table 749-1

[a] It is expected that this habitat evaluation will be undertaken by an experienced field biologist. If this is not the case, enter a conservative score of (1) for questions 3 and 4.

[b] **Habitat rating system.** Rate the quality of the habitat as high, intermediate or low based on your professional judgment as a field biologist. The following are suggested factors to consider in making this evaluation:

> **Low:** Early successional vegetative stands; vegetation predominantly noxious, nonnative, exotic plant species or weeds. Areas severely disturbed by human

activity, including intensively cultivated croplands. Areas isolated from other habitat used by wildlife.

High: Area is ecologically significant for one or more of the following reasons: Late-successional native plant communities present; relatively high species diversity; used by an uncommon or rare species; priority habitat (as defined by the Washington Department of fish and Wildlife); part of a larger area of habitat where size or fragmentation may be important for the retention of some species.

Intermediate: Area does not rate as either high or low.

[c] Indicate "yes" if the area attracts wildlife or is likely to do so. Examples: Birds frequently visit the area to feed; evidence of high use b mammals (tracks, scat, etc.); habitat "island" in an industrial area; unusual features of an area that make it important for feeding animals; heavy use during seasonal migrations.

[Area Calculation Aid] [Aerial Photo with Area Designations] [TEE Table 749-1] [Index of Tables]

[Exclusions Main] [TEE Definitions] [Simplified or Site-Specific?] [Simplified Ecological Evaluation] [Site-Specific Ecological Evaluation] [WAC 173-340-7493]

[TEE Home]

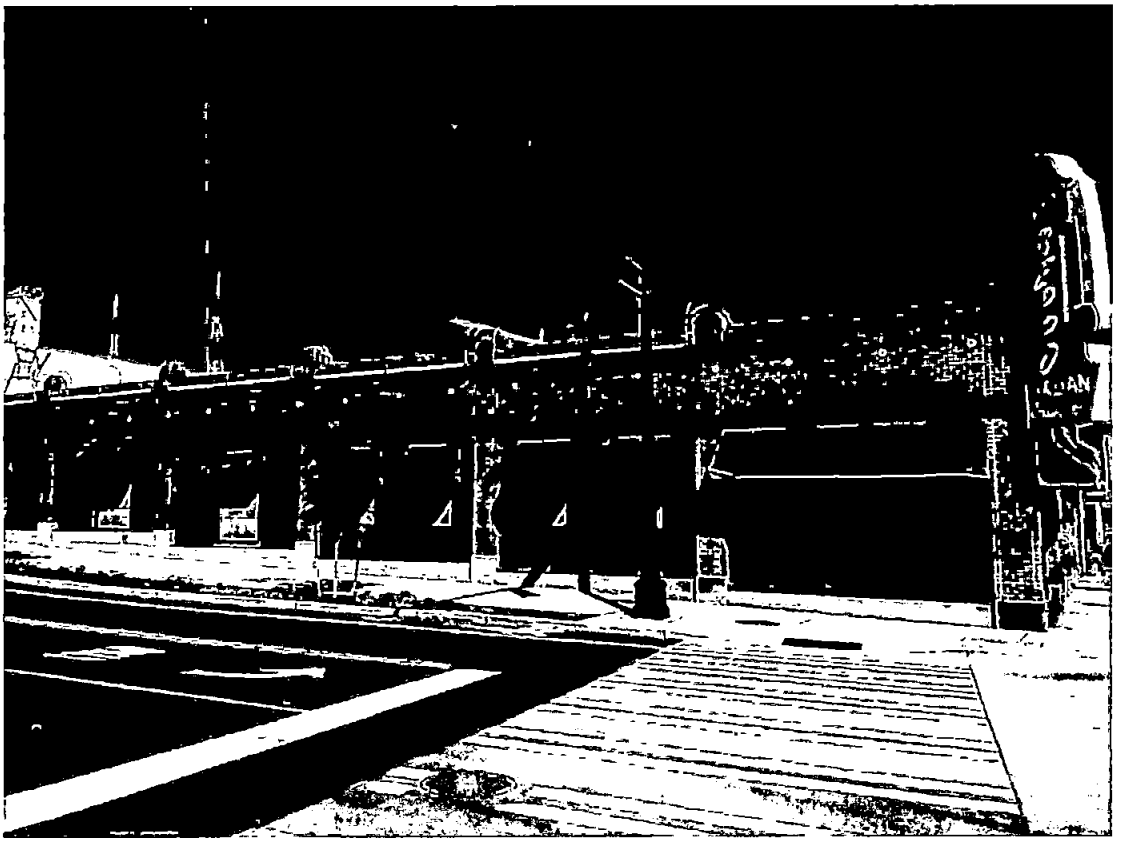
APPENDIX F

SAMPLING AND ANALYSIS PLAN

SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102

SAMPLING AND ANALYSIS PLAN

APPENDIX F OF THE REMEDIAL INVESTIGATION AND CLEANUP ACTION PLAN



Property:
Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington

Report Date:
November 19, 2015

Prepared for:
W-T 701 Holdings VII, L.L.C.
c/o Talon
720 Olive Way, Suite 1020
Seattle, Washington

Sampling and Analysis Plan

Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington 98109

Prepared for:

W-T 701 Holdings VII, L.L.C.
c/o Talon
720 Olive Way, Suite 1020
Seattle, Washington 98101

Project No.: 1154-001-01

Prepared by:

Charles Cacek
Associate Geologist

Reviewed by:

John Funderburk, MSPH
Principal

November 19, 2015

SoundEarth Strategies

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ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

CAP	Cleanup Action Plan
DQO	data quality objective
DRPH	diesel-range petroleum hydrocarbons
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
FC	field coordinator
GRPH	gasoline-range petroleum hydrocarbons
HASP	Site-Specific Health and Safety Plan
ID	sample identifier
MS	matrix spike
MSD	matrix spike duplicate
MTCA	Washington State Model Toxics Control Act
NAVD88	North American Vertical Datum of 1988
NWTPH	Northwest Total Petroleum Hydrocarbon
ORPH	oil-range petroleum hydrocarbons
PID	photoionization detector
PQL	practical quantitation limit
the Property	Buca di Beppo/Ducati property located at 701 9th Avenue North in Seattle, Washington
QA	quality assurance
QC	quality control
RI/CAP Report	Remedial Investigation and Cleanup Action Plan report
ROW	right-of-way
RPD	relative percent difference

ACRONYMS AND ABBREVIATIONS (CONTINUED)

SAP	Sampling and Analysis Plan
Site	includes soil contaminated with GRPH, DRPH, ORPH, lead, and mercury beneath the Property
SoundEarth	SoundEarth Strategies, Inc.
TESC	temporary erosion and sediment control
UST	underground storage tank
VOC	volatile organic compound
WAC	Washington Administrative code

1.0 INTRODUCTION

SoundEarth Strategies, Inc. (SoundEarth) has prepared this Sampling and Analysis Plan (SAP) for the Buca di Beppo/Ducati property located at 701 9th Avenue North in Seattle, Washington (the Property). In accordance with the Washington State Model Toxics Control Act (MTCA) cleanup regulations as established in Chapter 173-340-200 of the Washington Administrative Code (WAC 173-340-200), the Site is defined by the full lateral and vertical extent of contamination exceeding applicable cleanup levels that has resulted from releases of petroleum hydrocarbons on the Property. Based on the information gathered to date, the Site includes soil contaminated with gasoline-, diesel-, and oil-range petroleum hydrocarbons (GRPH, DRPH, and ORPH, respectively), lead, and mercury beneath the central-western and northwestern portions of the Property.

This SAP was developed to supplement the requirements of the cleanup action plan and to meet the requirements of a SAP as defined by MTCA (WAC 173-340-820).

1.1 PURPOSE AND OBJECTIVES

The purpose of the SAP is to describe the sample collection, handling, and analysis procedures to be implemented during the cleanup action in accordance with WAC 173-340-380 of MTCA. This SAP identifies specific sampling and analysis protocols, project schedule, and organization and responsibilities. It also provides detailed information regarding the sampling and data quality objectives, sample location and frequency, equipment, and procedures to be used during the cleanup action; sample handling and analysis; procedures for management of waste; quality assurance (QA) protocols for field activities and laboratory analysis; and reporting requirements.

1.2 SAMPLING AND ANALYSIS PLAN ORGANIZATION

The SAP is organized into the following sections:

- **Section 1.0, Introduction.** This section describes the purpose of the SAP and provides a description of the Property features and location, a brief summary of the current and historical uses of the Property, a summary of the results of previous investigations conducted at the Site, and lists the Cleanup Action Plan (CAP) tasks.
- **Section 2.0, Project Organization and Management.** This section presents the project team, including field personnel and management.
- **Section 3.0, Cleanup Action Plan Field Program.** This section presents the cleanup action objectives and summarizes field activities.
- **Section 4.0, Sample Handling and Quality Control Procedures.** This section describes the sample handling techniques and quality assurance procedures that will be followed during the cleanup action.
- **Section 5.0, Analytical Testing.** This section describes the type and number of sample analyses that will be conducted on soil and process water samples during the cleanup action.
- **Section 6.0, Management of Investigation-Derived Waste.** This section provides details on handling and disposal procedures that will be implemented during the cleanup action.

- **Section 7.0, Data Quality Objectives.** This section summarizes the data quality objectives (DQOs) that will need to be met to ensure the validity of the analytical results.
- **Section 8.0, Data Collection.** This section describes the type, transfer, inventory management, and validation procedures of the data that will be gathered during the cleanup action.
- **Section 9.0, Quality Control Procedures.** This section provides details regarding the quality control (QC) procedures for both field activities and laboratory analysis.
- **Section 10.0, Corrective Actions.** This section identifies the approaches that will be used to correct any protocols that may compromise the quality of the data.
- **Section 11.0, Documentation and Records.** This section outlines the documentation that will be prepared during the cleanup action. It includes a discussion of document management, waste disposal tracking, and compliance reports.
- **Section 12.0, Health and Safety Procedures.** This section summarizes the health and safety procedures outlined in the Site-Specific Health and Safety Plan (HASP; Appendix F of the Remedial Investigation and Cleanup Action Plan [RI/CAP Report]).
- **Section 13.0, References.** This section lists documents cited through this report.

1.3 BACKGROUND

This section provides a description of the Property features and location, a summary of historical Property use, and a summary of previous investigations conducted at the Property and adjoining parcels and rights-of-way (ROWs).

1.3.1 Property Location and Description

The Property consists of two contiguous, rectangular-shaped tax parcels (King County Parcel Nos. 408880-3435 and 408880-3440) that cover a total of approximately 29,396 square feet (0.67 acres) of land in Township 25 North/Range 4 East/Section 30. The Property is located at 701 9th Avenue North, approximately 0.4 miles north of downtown Seattle, Washington (Figure F-1). The Property is currently occupied by a 1922-vintage, single-story building that encloses approximately 29,250 square feet of space. The masonry structure has a flat roof and is heated by an electric/natural gas HVAC system.

Potable water and sewer service are provided to the Property by Seattle Public Utilities. Puget Sound Energy provides natural gas and Seattle City Light provides electricity to the building. Solid waste disposal and recycling services are provided by CleanScapes.

According to the Seattle Municipal Code Zoning Map, the Property is zoned SM-85, which is used for mixed use purposes. The current tenants of the building are the Buca di Beppo Italian restaurant (southern tenant space) and Ducati motorcycle sales and service (northern tenant space). The northern portion of the building is currently used as a parking garage.

1.4 PROPERTY HISTORY

It appears that the Property was historically inundated by Lake Union and was artificially filled sometime between 1908 and 1912. The Property was initially developed in 1922 with the existing commercial building and was in use as an automotive/truck repair shop by the 1920s until at least 1969. The existing northern tenant space has continued to be used for parking and vehicle repair activities since 1969. The

truck and vehicle repair facilities included the historical use of sumps, a potential greasing pit, hydraulic hoists, and a waste oil/heating oil underground storage tank (UST). A portion of the building was in use as an automotive dealership by 1989.

1.5 SUMMARY OF PREVIOUS INVESTIGATIONS

Subsurface investigations conducted at the Property have identified soil containing concentrations of DRPH, ORPH, GRPH, lead, and mercury above the applicable cleanup levels in the central-western and northwestern corner of the Property. In addition, groundwater contaminated with DRPH has been observed in the northern portion of the Property (potentially associated with the adjacent Roy Street Shops site, as discussed in detail in the Remedial Investigation and Cleanup Action Plan) and groundwater contaminated with chlorinated solvents has likely migrated onto the southern portion of the Property from the hydraulically upgradient American Linen Supply Co. site located at 700 Dexter Avenue North, as described in publicly available reporting on that site.

1.6 CLEANUP ACTION PLAN TASK DESCRIPTIONS

The tasks proposed as part of the cleanup action plan include the following:

- Site preparation and mobilization
- Demolition and UST decommissioning
- Well decommissioning
- Shoring installation
- Excavation
- Construction dewatering and discharge
- Waterproof foundation installation
- Compliance monitoring (soil sampling)

A summary of the CAP schedule is provided in Table F-1.

2.0 PROJECT ORGANIZATION AND MANAGEMENT

This section describes the overall project management strategy for implementing the cleanup action.

To ensure efficient decision-making for field sampling and laboratory analysis, key data collection decisions, decision criteria, process for decision-making, QA/QC procedures, and responsibilities are described below and detailed in Table F-2.

These decision and communication plans will be followed by field personal under direction of the field coordinator and task manager. Site quality control to ensure proper communication and adherence to this SAP is discussed below in Section 9.0.

The cleanup action is being conducted by SoundEarth on behalf of W-T 701 Holdings VII, L.L.C. The following key personnel have been identified for the project. A summary of key personnel roles and responsibilities is provided in Table F-2.

Regulatory Agency. The Washington State Department of Ecology (Ecology) is the lead regulatory agency for the Site, as promulgated in MTCA. The cleanup action for the Site is being conducted as an independent remedial action in accordance with WAC 173-340-515 of MTCA.

Ecology's site manager for the project is:

To be named
Washington State Department of Ecology
3190 160th Avenue Southeast
Bellevue, Washington 98008
425-649-7098
Email

Project Contact. SoundEarth has been contracted by W-T 701 Holdings VII, L.L.C. to plan and implement the cleanup action at the Site. The project contact for W-T 701 Holdings VII, L.L.C. is:

Mr. Charlie Foushee
W-T 701 Holdings VII, L.L.C.
c/o Talon
720 Olive Way, Suite 1020
Seattle, Washington 98101
206-607-2572
Foushee@talonprivate.com

Project Principal. The project principal provides oversight of all project activities and reviews all data and deliverables before their submittal to the project contact or regulatory agency. The project principal for SoundEarth is:

Mr. John Funderburk
SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102
206-306-1900
Fax: 206-306-1907
jfunderburk@soundearthinc.com

Project Manager. The project manager has overall responsibility for developing the SAP, monitoring the quality of the technical and managerial aspects of the cleanup action, and implementing the SAP and corresponding corrective measures, where necessary. The project manager for SoundEarth is:

Mr. Charles Cacek
SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102
206-306-1900
Fax: 206-306-1907
ccacek@soundearthinc.com

Laboratory Project Manager. The laboratory project manager will provide analytical support and will be responsible for providing certified, pre-cleaned sample containers and sample preservatives (as appropriate) and for ensuring that all chemical analyses meet the project quality specifications detailed in this SAP. Friedman & Bruya Inc., of Seattle, Washington, has been contracted by the ownership group to perform the chemical and physical analyses for compliance samples collected during the cleanup action. The laboratory project manager is:

Mr. Mike Erdahl
Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, Washington 98119
206-285-8282
merdahl@friedmanandbruya.com

Project QA/QC Officer. The project QA/QC officer has the responsibility to monitor and verify that the work is performed in accordance with the SAP and other applicable procedures. The project QA/QC officer has the responsibility to assess the effectiveness of the QA/QC program and to recommend modifications to the program when applicable. The project QA/QC officer is responsible for assuring that the personnel assigned to the project are trained relative to the requirements of the QA/QC program and for reviewing and verifying the disposition of nonconformance and corrective action reports. The project QA/QC officer for SoundEarth is:

Charles Cacek
SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102
206-306-1900
Fax: 206-306-1907
ccacek@soundearthinc.com

Field Coordinator. The field coordinator (FC) will supervise field collection of all samples. The FC will ensure proper recording of sample locations, depths, and identification; sampling and handling requirements, including field decontamination procedures; physical evaluation and logging of samples; and completing of chain-of-custody forms. The FC will ensure that all field staff follows the SAP, that the physical evaluation and logging of soil is based on the visual-manual classification method American Society for Testing and Materials D-2488, and that standardized methods for sample acceptability and physical description of samples be followed. The FC will ensure that field staff maintains records of field sampling events using the forms included as Attachment A of this SAP. The FC will be responsible for proper completion and storage of field forms. The FC for SoundEarth is:

Charles Cacek
SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102
206-306-1900
Fax: 206-306-1907
ccacek@soundearthinc.com

Field Staff. Members of the field staff must understand and implement the QA/QC program, coordinate and participate in the field sampling activities, coordinate sample deliveries to laboratory, and report any deviations from project plans as they relate to the cleanup action objectives as presented in the SAP. Major deviations from the SAP, such as the inability to collect a sample from a specific sampling location, obtaining an insufficient sample volume for the required analyses, or a change in sampling method, must be reported to the project manager.

Subcontractors. All subcontractors will follow the protocols outlined in this SAP and will be overseen and directed by SoundEarth. No subcontractors have been identified by SoundEarth at the time of this report.

Additional contractors not operating as a subcontractor to SoundEarth will be responsible for coordinating health and safety protocols with the general contractor.

Site Superintendent/General Contractor:

bill.gormley@lewisbuilds.com
Lease Crutcher Lewis
2200 Western Avenue #500
Seattle, Washington 98121
206-622-0500
bill.gormley@lewisbuilds.com

3.0 CLEANUP ACTION PLAN FIELD PROGRAM

The objectives of the cleanup action for the Site have been established in consideration of the future use of the Property and include the following:

- Excavating on-Property soil containing TPH and metals at concentrations that present a risk to human health and the environment.
- Removing all on-Property groundwater containing elevated TPH concentrations through construction dewatering.
- Installing a waterproof foundation from lot-line to lot-line that will serve as a vapor and groundwater barrier for the Property.
- Acquiring a No Further Action determination letter for the Property.

A discussion of the field program is provided in the following sections.

3.1 SUMMARY OF FIELD ACTIVITIES AND SCOPE OF WORK

3.1.1 Site Preparation and Mobilization

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

3.1.2 Demolition and Underground Storage Tank Decommissioning

A hazardous materials survey will be completed for all the buildings on the Property before demolition. If abatement measures are necessary, the contractor will perform these activities prior to the demolition of the buildings.

All known USTs on the Property will be decommissioned and a UST site assessment will be conducted under the oversight of a Washington state-certified UST site assessor. The UST will be removed in accordance with the *Guidance for Site Checks and Site Assessment for Underground Storage Tanks* (Ecology 2003), "Underground Storage Tank Regulations" (WAC 173-360), and *Guidance for Remediation of Petroleum Contaminated Sites* (Ecology 2011).

3.1.3 Well Decommissioning

Monitoring wells within the footprint of the excavation area will be decommissioned by a licensed well driller or under the supervision of a professional engineer, in accordance with the Ecology Water Well Construction Act (1971), Revised Code of Washington Chapter 18.104 (WAC 173-160-460). The wells will be abandoned in place using bentonite clay.

3.1.4 Shoring Installation

Shoring will be installed around the entire perimeter of the redevelopment. The shoring design will be incorporated into the future redevelopment plans. Shoring will be installed in progressive increments as the excavation proceeds to facilitate the safe excavation of contaminated soil to the required depth.

3.1.5 Shoring and Excavation Sequence

The bulk excavation will begin after the completion of the following items:

- Installing TESC measures.
- Establishing site security and fencing.
- Demolishing existing buildings.
- Preparing ingress and egress pathways.
- Decommissioning monitoring wells within the Remedial Excavation Area.
- Decommissioning and removal of the suspect UST.
- Installing the shoring system (as the excavation proceeds).

Approximately 5,900 tons of contaminated soil will be excavated from the Site and disposed of at a Subtitle D landfill and an additional 5,200 tons of mildly impacted exported for suitable off-property disposal. SoundEarth will use a soil management grid, which breaks the entire Remedial Excavation Area into 15-foot by 15-foot grid cells, to readily identify and classify each grid cell for proper off-site disposal. Soil will be visually inspected for staining, sheen, and odor. In addition to physical observations, a photoionization detector (PID) will be used to quantitatively measure volatile organic compounds (VOCs) in the soil. As the excavation proceeds vertically downward, the shoring will be extending in accordance with the shoring wall design.

When performance samples show that all of the petroleum-contaminated soil has been removed from the identified Remedial Excavation Areas, the larger redevelopment excavation and soil screening will resume. The contractor will make an effort to comply with the following: (1) minimize the cross contamination of clean soil during the excavation of the Remedial Excavation Areas by directly loading the contaminated soil, if feasible, and minimizing tracking of soil across the Property; (2) establish an exclusion zone and place site controls, such as tire and truck wash stations, at the edge of the exclusion zone; and (3) limit the excavation daily to only remove contaminated soil to ensure proper decontamination of equipment before excavating clean soil, if feasible.

3.1.5.1 Contingency Plan to Address Unknown Contamination

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

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

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

In the event that a previously unidentified UST is encountered during the course of the excavation activities, a UST site assessment will be conducted under the oversight of a Washington State certified UST site assessor. The UST will be removed in accordance with the *Guidance for Site Checks and Site Assessment for Underground Storage Tanks* (Ecology 2003), "Underground Storage Tank Regulations" (WAC 173-360), and *Guidance for Remediation of Petroleum Contaminated Sites* (Ecology 2011). In the event that impacts to soil are observed, performance and confirmational soil samples will be collected and analyzed to ensure that the contaminated soil is removed and properly characterized before disposal.

3.1.6 Construction Dewatering and Discharge

The Site excavation is expected to advance into the shallow water-bearing zone beneath the Property. Groundwater is expected to accumulate in the excavation and significant dewatering will be needed to facilitate excavation completion and installation of the planned foundation. Water that is generated from surface water runoff due to precipitation events and groundwater encountered during the course of the excavation will be gathered at a low point in the excavation, as determined by the contractor, and pumped directly to the City of Seattle sanitary sewer system. A permit will be acquired in advance of any discharge from the Property and discharge will be conducted in compliance with all permitted requirements.

According to preliminary plans, the final elevation of the excavation will be approximately 16 feet above mean sea level (North American Vertical Datum of 1988 [NAVD88]) on the eastern half of the Property and will grade down to the north on the western portion of the Property, grading down from 16 feet NAVD88 to 7 feet NAVD88 in a north–south direction. Since groundwater resides at an elevation of approximately 17 feet NAVD88, extensive dewatering is anticipated. The dewatering design will be incorporated into the future redevelopment plans.

3.1.7 Parking Structure

Construction of the subgrade parking structure will commence after the excavation is completed. Architectural details for the project are not currently available; however, preliminary plans indicate two levels of subgrade parking will be constructed. Based on initial redevelopment discussions, a waterproof foundation system is planned for use, taking into consideration the depth of the excavation up to 7 feet NAVD88) and the location of the primary water-bearing zone (approximately 17 feet NAVD88).

The waterproofing system, coupled with a certified and properly installed vapor barrier system, will be constructed to act as a barrier to recontamination and vapor intrusion from any groundwater plume within the ROWs or adjacent alleys associated with the American Linen Supply Co. and/or the Roy Street Shops sites.

3.2 SOIL SAMPLING

Performance soil samples will be collected and analyzed using a U.S. Environmental Protection Agency (EPA)-accredited laboratory to confirm that all of the petroleum-contaminated soil has been removed. Performance soil samples will be collected from the bottom of each 15-foot by 15-foot soil grid cell and from the sidewall of each grid cell of the Remedial Excavation Area. Performance soil samples will be centered in the grid cell and will be located and identified by the grid cell. Information logged during soil performance sampling will include sample depth, Unified Soil Classification System description, soil moisture content, observations of physical indications of contamination (e.g., odors, staining), and field-screening data obtained using a PID.

A contingency for performance samples will be retained in the event that an unknown condition is encountered during the course of the excavation, such as a UST. In this case, performance monitoring for soil will be conducted and the analytical results will direct the advancement of the excavation and characterize the soil for disposal.

Soil samples will be collected directly from the sidewalls and/or bottom of the Remedial Excavation Area cells using either stainless steel or plastic sampling tools. Soil samples collected at depths of less than 4 feet bgs will be collected manually. Samples collected at depths below 4 feet bgs will be collected with a

mechanized bucket unless engineering controls are in place that allow for manual sample collection at depths greater than 4 feet bgs. All non-dedicated sampling equipment will be decontaminated between uses. The samples will be submitted for laboratory analysis, and the analytical results will be used to assess when the points of compliance for soil have been achieved.

4.0 SAMPLE HANDLING AND QUALITY CONTROL PROCEDURES

The section summarizes sample labeling, containers, handling, chain of custody, and field quality control procedures to be applied during the cleanup action.

4.1 SAMPLE IDENTIFICATION

Each sample collected during the cleanup action will be assigned a unique sample identifier (ID) and number. Sample ID labels will be filled out and affixed to appropriate containers immediately before sample collection. The label will be filled out in indelible ink and will include the following information: media, date, time sampled, sample identification and number, project name, project number, sampler's initials, and analyte preservative(s), if any. An example of a Sample ID Label is included in Attachment A of this SAP.

4.1.1 Soil

Soil samples collected during the cleanup action will be identified by their position relative to a grid measuring approximately 150 feet by 150 feet across the Property, and segregated into discrete grid cells A through J (north–south) and 1 through 10 (west–east), each measuring 15 feet by 15 feet.

Bottom and sidewall samples will be assigned a unique ID that will include the components listed below:

- The grid cell identification (e.g., A1)
- The compass heading of the sidewall (e.g., N)
- The sample type (e.g., bottom "B", sidewall "SW")
- The number of samples collected in that area (e.g., 01, 02, 03)
- The depth in feet bgs (e.g., 15)

For example, the first soil sample collected from the north sidewall of the remedial excavation in grid cell A1 at a depth of 8 feet bgs would be identified as A1NSW01-8.

Likewise, the first soil sample collected from the bottom of grid cell C2 at a depth of 25 feet would be identified as C2B01-25. If the base of the grid cell required overexcavation and further sampling within the same grid cell and depth, a second sample would be collected and would be identified as C2B02-28. The sample identification would be recorded on the Sample ID Label, Field Report form, and Sample Chain of Custody form.

4.2 DECONTAMINATION PROCEDURES

Decontamination of all nondisposable tools and equipment will be conducted before each sampling event and between each sampling location, including stainless steel bowls/containers and stainless steel spoons/spatulas. A sufficient supply of clean, small equipment will be mobilized to the sampling

locations to minimize the need for performing field decontamination. Field personnel will change disposable nitrile gloves before collecting each sample and before decontamination procedures and will take precautions to prevent contaminating themselves with water used in the decontamination process. The following steps will be followed to decontaminate reusable soil and groundwater sampling equipment:

- The equipment will be washed with a solution of Alconox (or an equivalent detergent) and water.
- The equipment will be rinsed with tap water.
- A final rinse will be conducted with distilled or deionized water.

Residual sample media from the equipment, used decontamination solutions and associated materials, and disposable contaminated media will be disposed of according to the procedures described in Section 6.0, Management of Investigation-Derived Waste.

4.3 SAMPLE CONTAINER AND HANDLING PROCEDURES

Soil samples collected for analysis of VOCs will be collected in accordance with EPA Method 5035. Required containers, preservation, and holding times for each anticipated analysis are listed in Table F-3.

SoundEarth personnel will be responsible for following the container handling procedures below:

- Each sample container will be labeled and handled with the date and time sampled, well identification number, project number, and preservative(s), if any.
- All sample collection information will be documented on a Sample Chain of Custody form; the sample will be placed in a cooler chilled to near 4 degrees Celsius and transported to the laboratory.

The FC will check all container labels, chain of custody for entries, and field notes for completeness and accuracy at the end of each day.

4.4 SAMPLE CHAIN-OF-CUSTODY PROCEDURES

The written procedures that will be followed whenever samples are collected, transferred, stored, analyzed, or destroyed are designed to create an accurate written record that can be used to trace the possession and handling of the sample from the moment of collection through analysis and reporting of analytical values. This written record, the Sample Chain of Custody form, will be filled out by the field sampling team at the time the sample is obtained. An example of the Sample Chain of Custody form is included in Attachment A.

All samples submitted to the laboratory are accompanied by the Sample Chain of Custody form. This form is checked for accuracy and completeness and then signed and dated by the laboratory sample custodian accepting the sample. At the laboratory, each sample is assigned a unique, sequential laboratory identification number that is stamped or written on the Sample Chain of Custody form.

All samples are held under internal chain of custody in the sample control room using the appropriate storage technique (i.e., ambient, refrigeration, frozen). The laboratory project manager assigned to a

particular client will be responsible for tracking the status of the samples throughout the laboratory. Samples will be signed out of the sample control room in a sample control logbook by the analyst who will prepare the samples for analysis.

The Sample Chain of Custody form will include the following information: client, project name and number, date and time sampled, sample identification, sampler's initials, analysis, and analyte preservative(s), if any.

4.5 FIELD QUALITY ASSURANCE SAMPLING

One duplicate soil sample will be collected per approximate 20 soil samples collected during the cleanup action. The QA/QC samples will be assigned a unique sample ID and number. Duplicate samples will begin with the ID "Duplicate" and be followed by the sample number determined by the sample's order in which it was collected. For example, the second soil duplicate sample collected during the interim action would be labeled Duplicate-02. SoundEarth field staff will note the locations of the field duplicates on the Field Report Form and the Soil Sample Summary (Appendix A).

5.0 ANALYTICAL TESTING

All compliance samples will be submitted to Friedman & Bruya, Inc., of Seattle, Washington, an Ecology-accredited analytical laboratory, on a standard 7- to 10-day turnaround time or on a shortened (e.g., 24-hour) turnaround time if required by logistical constraints. All chemical and physical testing will adhere to EPA's SW-846 (EPA 2007) QA/QC procedures and analyses protocols or follow the appropriate Ecology methods. In completing chemical analyses for this project, the laboratory will meet the following minimum requirements:

- Adhere to the methods outlined in this SAP, including methods referenced for each analytical procedure.
- Provide a detailed discussion of any modifications made to previously approved analytical methods.
- Deliver PDF and electronic data as specified.
- Meet reporting requirements for deliverables.
- Meet turnaround times for deliverables.
- Implement QA/QC procedures discussed in Section 7.0, including DQOs, laboratory quality control requirements, and performance evaluation testing requirements.
- Notify the project QA/QC manager of any QA/QC problems when they are identified to allow for quick resolution.
- Allow laboratory and data audits to be performed, if deemed necessary.

Copies of the *Laboratory Quality Assurance Manual* from Friedman & Bruya, Inc. are on file at SoundEarth's offices for review and reference and will be followed throughout the cleanup action. Access to laboratory personnel, equipment, and records pertaining to samples, collection, transportation, and analysis can be provided. Container requirements, holding times, and preservation methods for soil and water are summarized in Table F-3.

Sample laboratory analytical results for each analyte will be compared to regulatory limits applicable to the cleanup action. A detailed description of the analytical methods, laboratory practical quantitation limits (PQLs), and applicable regulatory limits for each analyte are provided in Table F-4.

Select soil samples will be submitted for laboratory analysis of GRPH by Northwest Total Petroleum Hydrocarbon (NWTPH) Method NWTPH-Gx; DRPH and ORPH by NWTPH-Dx; and lead and mercury by EPA Method 200.8.

6.0 MANAGEMENT OF INVESTIGATION-DERIVED WASTE

Contaminated soil, groundwater, and disposable equipment generated during the cleanup action will be handled in accordance with state and federal regulations. The procedures for managing investigation-derived waste for the expected waste streams are discussed below.

6.1 SOIL

Soil containing petroleum hydrocarbon constituents that is excavated during the cleanup action at the Site will be segregated from clean overburden soil based on existing laboratory analytical data for that grid cell and field observations, when feasible. If soil is stockpiled for transport then samples of stockpiled excavated soil will be collected from locations where field instrumentation (i.e., PID) or field observations indicate that contamination is likely to be present and will be collected from a depth of 6 to 12 inches beneath the surface of the stockpile. The number of samples to be collected from the stockpile will be determined by Table 6.9 from Ecology's *Guidance for Remediation of Petroleum Contaminated Sites,* dated September 2011 (Attachment B). Based on the current development plan, all the soil being excavated from the Site will be removed for off-Site disposal. The treatment, storage, and disposal facility will classify the soil being delivered based on the laboratory analytical data provided by the generator.

6.2 WASTEWATER

Wastewater will be generated during the cleanup action in the course of equipment decontamination activities and dewatering activities. Collected stormwater and groundwater from the excavation area will be pumped to the City of Seattle-owned sanitary sewer system, in accordance with all permit requirements.

6.3 DISPOSABLES

Disposable personal protective clothing (e.g., TYVEK suits, rubber gloves, and boot covers) and disposable sampling devices (e.g., plastic tubing, plastic scoops, and bailers) will be placed in plastic garbage bags and disposed of as nonhazardous waste.

7.0 DATA QUALITY OBJECTIVES

Field and laboratory activities will be conducted in such a manner that the results will be valid and meet the DQOs for this project. Guidance for QA/QC will be derived from the protocols developed for the cited methods within EPA's documents *Test Methods for the Evaluation of Solid Wastes Laboratory Manual Physical/Chemical Methods SW-846* (EPA 2007) and the *USEPA Contract Laboratory Program, National Functional Guidelines for Organic Data Review* (EPA 2008). The DQOs are designed to:

- Assist the project manager and project team to focus on the factors affecting data quality during the planning stage of the project.
- Facilitate communication among field, laboratory, and project staff as the project progresses.
- Document the planning, implementation, and assessment procedures for QA/QC activities for the cleanup action.
- Verify that the DQOs are achieved.
- Provide a record of the project to facilitate final report preparation.

The DQOs for the project include both qualitative and quantitative objectives, which define the appropriate type of data and specify the tolerable levels of potential decision errors that will be used as a basis for establishing the quality and quantity of data needed to support the cleanup action. To verify that the DQOs are achieved, this SAP details aspects of sample collection and analysis, including analytical methods, QA/QC procedures, and data quality reviews. This SAP describes both qualitative and quantitative measures of data quality to verify that the DQOs are achieved.

Detailed QA/QC procedures in the field and at the laboratory are provided in the following sections. The DQOs for the cleanup action will be used to develop and implement procedures to verify that data collected is of sufficient quality to adequately address the objectives of the cleanup action as defined in the CAP. All observations and measurements will be made and recorded in such a manner as to yield results representative of the media and conditions observed and/or measured. Goals for representativeness will be met by verifying that sampling locations are selected properly, that a sufficient number of samples are collected, and that field screening and laboratory analyses are conducted properly.

The quality of the laboratory data will be assessed by precision, accuracy, representativeness, completeness, comparability, and sensitivity. Definitions of these parameters and the applicable QC procedures are described in Sections 7.1 through 7.6. Quantitative DQOs are provided following each definition. Laboratory DQOs have been established by the analytical laboratory. Applicable quantitative goals for these DQOs are listed in Table F-5.

7.1 PRECISION

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of two or more measurements compared to their average values. Precision is calculated from results of duplicate sample analyses. Precision is quantitatively expressed as the relative percent difference (RPD) and is calculated as follows:

$$RPD = \frac{(C_1 - C_2)}{(C_1 + C_2)/2} x\,100$$

Where:
RPD = relative percent difference
C_1 = larger of the two duplicate results (i.e., the highest detected concentration)
C_2 = smaller of the two duplicate results (i.e., the lowest detected concentration)

There are no specific RPD criteria for organic chemical analyses. Quantitative RPD criteria for organic analyses will be based on laboratory-derived control limits.

7.2 ACCURACY

Accuracy is a measure of the closeness (bias) of the measured value to the true value. The accuracy of chemical analytical results is assessed by "spiking" samples in the laboratory with known standards (a surrogate or matrix spike of known concentration) and determining the percent recovery. The accuracy is measured as the percent recovery (%R) and is calculated as follows:

$$\%R = \frac{(M_{sa} - M_{ua})}{C_{sa}} x\,100$$

Where:

%R = percent recovery

M_{sa} = measured concentration in spiked aliquot

M_{ua} = measured concentration in unspiked aliquot

C_{sa} = actual concentration of spike added

Laboratory matrix spikes and surrogates will be carried out at the analytical laboratory in accordance with EPA SW-846 (EPA 2007) and Ecology methods and procedures for inorganic and organic chemical analyses. The frequency of matrix spikes and matrix spike duplicates will each be one per batch of 20 samples or less for soil samples. Quantitative percent recovery criteria for organic analyses will be based on laboratory-derived control limits for surrogate recovery and matrix spike results.

The accuracy of sample results can also be affected by the introduction of contaminants to the sample during collection, handling, or analysis. Contamination of the sample can occur because of improperly cleaned sampling equipment, exposing samples to chemical concentrations in the field or during transport to the laboratory, or because of chemical concentrations in the laboratory. To demonstrate that the samples collected are not contaminated, laboratory method blank samples will be analyzed. The laboratory will run method blanks at a minimum frequency of 5 percent, or one per batch, to assess potential contamination of the sample within the laboratory.

7.3 REPRESENTATIVENESS

Representativeness is a qualitative assessment of how closely the measured results reflect the actual concentration or distribution of the constituent concentrations in the matrix sampled. The sampling plan design, sample collection techniques, sample handling protocols, sample analysis methods, and data review procedures have been developed to verify that the results obtained are representative of the Site conditions. These issues are addressed in detail in Section 5.0, Analytical Testing, and Section 9.0, Quality Control Procedures, in this SAP.

7.4 COMPLETENESS

Completeness is defined as the percentage of measurements judged to be valid. Results will be considered valid if they are not rejected during data validation (Section 9.0, Quality Control Procedures). Completeness is calculated as follows:

$$C = \frac{(Number\ of\ Valid\ Measurements)}{(Total\ Number\ of\ Measurements)} x\ 100$$

Objectives for completeness are based, in part, on the subsequent uses of the data (i.e., the more critical the use, the greater the completeness objective). The objectives for completeness of samples are expressed as percentages, which refer to the minimum acceptable percentages of samples received at the laboratory in good condition and acceptable for analysis. The objectives of completeness for other samples are 95 percent for soil and water samples. These objectives will be met through the use of proper sample containers, proper sample packaging procedures to prevent breakage during shipment, proper sample preservation, and proper labeling and chain-of-custody procedures. A loss of 5 to 10 percent of intended samples is common, and the goals set are sufficient for intended data uses.

The objectives for completeness of chemical analyses are also expressed as percentages and refer to the percentages of analytical requests for which usable analytical data are produced. The initial objective for completeness of chemical analyses in the laboratory is 95 percent.

7.5 COMPARABILITY

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. The use of standard Ecology and EPA methods and procedures for both sample collection and laboratory analysis will make the data collected comparable to both internal and other data generated.

7.6 SENSITIVITY

Analytical sensitivities are measured by PQLs, which are defined as the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. PQLs are determined by the laboratory. The specific analytes and their corresponding PQLs that will be required for the cleanup action are presented in Table F-4. The detection or reporting limits for actual samples may be higher depending on the sample matrix and laboratory dilution factors.

8.0 DATA COLLECTION

This section outlines the procedures to be followed for the inventory, control, storage, and retrieval of data collected during performance of the cleanup action. The procedures contained in this SAP are designed to verify that the integrity of the collected data is maintained for subsequent use. Moreover, project-tracking data (e.g., schedules and progress reports) will be maintained to monitor, manage, and document the progress of the cleanup action.

8.1 DATA COLLECTION APPROACH

Procedures that will be used to collect, preserve, transport, and store samples are described in Section 4.0, Sample Handling and Quality Control Procedures, of this SAP. All sampling protocols will be performed in accordance with generally accepted environmental practices and will meet or exceed current regulatory standards and guidelines. Sampling procedures may be modified, if necessary, to satisfy amendments to current regulations, methods, or guidelines. The data collection approach for key elements of the cleanup action field program will verify the project DQOs are met or exceeded. The key elements include soil samples collected and analytical results used to demonstrate that the concentrations of the chemicals of concern at the limits of the excavation are below applicable cleanup

levels as defined in the SAP. The total number of samples collected and specific analyses to be performed will be based on field screening results, field observations, and analytical results for performance and confirmational monitoring.

8.2 DATA TYPES

A variety of data will be generated during the cleanup action, including sampling and analytical data. The laboratory analytical data will be transmitted to SoundEarth as an electronic file, in addition to a hardcopy laboratory data report. This method will facilitate the subsequent validation and analysis of these data while avoiding transcription errors that may occur with computer data entry. Examples of data types include manually recorded field data, such as boring logs, and electronically reported laboratory data.

8.3 DATA TRANSFER

Procedures controlling the receipt and distribution of incoming data packages to SoundEarth and outgoing data reports from SoundEarth include the following:

- Incoming documents will be date-stamped and filed. Correspondence and transmittal letters for all reports, maps, and data will be filed chronologically. Data packages, such as those from field personnel, laboratories (such as soil data) and surveyors (elevation data), will be filed by project task, subject heading, and date. If distribution is required, the appropriate number of copies will be made and distributed to the appropriate persons or agencies.
- A transmittal sheet will be attached to all project data and reports sent out. A copy of each transmittal sheet will be kept in the administrative file and the project file. The project manager and project QA/QC officer will review all outgoing reports and maps.

8.4 DATA INVENTORY

Procedures for filing, storage, and retrieval of project data and reports are discussed below.

8.4.1 Document Filing and Storage

As previously discussed, project files and raw data files will be maintained at SoundEarth's office. Files will be organized by project tasks or subject heading and maintained by the document control clerk. Hard copy project files will be archived for a minimum of 3 years after completion of the project. Electronic copies of files will be maintained in a project directory and backed up daily, weekly, and monthly.

8.4.2 Access to Project Files

Access to project files will be controlled and limited to W-T 701 Holdings VII, L.L.C. and its authorized representatives, Ecology, and SoundEarth personnel. When a hard copy file is removed for use, a sign-out procedure will be used to track custody. If a document is to be used for a long period, a copy will be used, and the original will be returned to the project file. Electronic access to final reports, figures, and tables will be write-protected in the project directory.

8.5 DATA VALIDATION

Data quality review will be performed, where applicable, in accordance with the current EPA guidance as set forth in *Guidance on Environmental Data Verification and Data Validation* (EPA 2002). The following types of QC information will be reviewed, as appropriate:

- Method deviations
- Sample extraction and holding times
- Method reporting limits
- Blank samples (equipment rinsate and laboratory method)
- Duplicate samples
- Matrix spike/matrix spike duplicate samples (accuracy)
- Surrogate recoveries
- Percent completeness and RPD (precision)
- A QA review of the final analytical data packages for samples collected during the cleanup action

8.6 DATA REDUCTION AND ANALYSIS

The project manager and project QA/QC officer are responsible for data review and validation. Data validation parameters are outlined as quantitative DQOs in Section 7.0, Data Quality Objectives, of this SAP. The particular type of analyses and presentation method selected for any given data set will depend on the type, quantity, quality, and prospective use of the data in question. The analysis of the project data will require data reduction for the preparation of tables and figures. To verify that data are accurately transferred during the reduction process, a minimum of two data reviews will be performed before issuing the documents. Any incorrect transfers of data will be highlighted and changed.

9.0 QUALITY CONTROL PROCEDURES

This section provides a description of the QC procedures for both field activities and laboratory analysis. The field QC procedures include standard operating procedures for sample collection and handling, equipment calibration, and field QC samples.

9.1 FIELD QUALITY CONTROL

Field QC samples (e.g., duplicate samples) will be collected during this project and will follow the standard operating procedures during field screening activities. The procedural basis for these field data collection activities will be documented on the field report forms, as described in Section 11.1, Field Documentation, of this SAP. Any deviations from the established protocols will be documented on the field report forms.

9.2 LABORATORY QUALITY CONTROL

Analytical laboratory QA/QC procedures are provided in the *Laboratory Quality Assurance Manual* that is on file at SoundEarth's office for Friedman & Bruya, Inc. and summarized below.

Laboratory Quality Control Criteria. Results of the QC samples from each sample group will be reviewed by the analyst immediately after a sample group has been analyzed. The QC sample results will then be evaluated to determine whether control limits were exceeded. If control limits are exceeded in the sample group, corrective action (e.g., method modifications followed by reprocessing the affected samples) will be initiated before processing a subsequent group of samples. All primary chemical standards and standard solutions used in this project will be traceable to documented and reliable commercial sources. Standards will be validated to determine their accuracy by comparison with an independent standard. Any impurities identified in the standard will be documented.

The following paragraphs summarize the procedures that will be used to assess data quality throughout sample analysis:

- **Laboratory Duplicates.** Analytical duplicates provide information on the precision of the analysis and are useful in assessing potential sample heterogeneity and matrix effects. Analytical duplicates are subsamples of the original sample that are prepared and analyzed as a separate sample. A minimum of 1 duplicate will be analyzed per sample group or for every 20 samples, whichever is more frequent.
- **Matrix Spikes and Matrix Spike Duplicates.** Analysis of matrix spike (MS) samples provides information on the extraction efficiency of the method on the sample matrix. By performing matrix spike duplicate (MSD) analyses, information on the precision of the method is also provided for organic analyses. A minimum of 1 MS/MSD will be analyzed for every sample group or for every 20 samples, whichever is more frequent.
- **Laboratory Control Samples.** A laboratory control sample is a method blank sample carried throughout the same process as the samples to be analyzed, with a known amount of standard added. The blank spike compound recovery assesses analytical accuracy in the absence of any sample heterogeneity or matrix effects.
- **Surrogate Spikes.** All project samples analyzed for organic compounds will be spiked with appropriate surrogate compounds, as defined in the analytical methods. Surrogate recoveries will be reported by the laboratories; however, no sample result will be corrected for recovery using these values.
- **Method Blanks.** Method blanks are analyzed to assess possible laboratory contamination at all stages of sample preparation and analysis. A minimum of 1 method blank will be analyzed for every extraction batch or for every 20 samples, whichever is more frequent.

9.3 DATA QUALITY CONTROL

All data generated by Friedman & Bruya, Inc. will undergo two levels of QA/QC evaluation: one by the laboratory and one by SoundEarth. As specified in Friedman & Bruya, Inc.'s *Laboratory Quality Assurance Manual*, the laboratory will perform initial data reduction, evaluation, and reporting. The analytical data will then be validated at SoundEarth under the supervision of the project QA/QC officer. The following types of QC information will be reviewed, as appropriate:

- Method deviations
- Sample transport conditions (temperature and integrity)
- Sample extraction and holding times

- Method reporting limits
- Blank samples
- Duplicate samples
- Surrogate recoveries
- Percent completeness
- RPD (precision)

SoundEarth will review field records and results of field observations and measurements to verify procedures were properly performed and documented. The review of field procedures will include the following:

- Completeness and legibility of field logs
- Preparation and frequency of field QC samples
- Equipment calibration and maintenance
- Sample Chain of Custody forms

Corrective actions are described in Section 10.0, Corrective Actions.

9.4 DATA ASSESSMENT PROCEDURES

The project manager and project QA/QC officer are responsible for data review and validation. Upon receipt of each data package from the laboratory, calculations using the equations presented for precision, accuracy, and completeness will be performed. Results will be compared to quantitative DQOs, where established, or qualitative DQOs. Data validation parameters are outlined in Section 7.0, Data Quality Objectives, of this SAP.

9.5 PERFORMANCE AUDITS

Performance audits will be completed for both sampling and analysis work. Field performance will be monitored through regular review of Sample Chain of Custody forms, field forms, and field measurements. The project manager and/or the project QA/QC Officer may also perform periodic review of work in progress at the Site.

Accreditations received from Ecology for each analysis by Friedman & Bruya, Inc. demonstrate the laboratory's ability to properly perform the requested methods. Therefore, a system audit of the analytical laboratory during the course of this project will not be conducted.

The project manager and/or project QA/QC officer will oversee communication with the analytical laboratory on a frequent basis while samples are being processed and analyzed at the laboratory. This will allow SoundEarth to assess progress toward meeting the DQOs and to take corrective measures if problems arise.

The analytical laboratory will be responsible for identifying and correcting, as appropriate, any deviations from performance standards as discussed in Friedman & Bruya, Inc.'s *Laboratory Quality Assurance Manual.* The laboratory will communicate to the project manager or the project QA/QC

officer all deviations to the performance standards and the appropriate corrective measures made during sample analysis. Corrective actions are discussed in Section 10.0 of this SAP.

10.0 CORRECTIVE ACTIONS

Corrective actions will be the joint responsibility of the project manager and the project QA/QC officer. Corrective procedures can include the following:

- Identifying the source of the violation.
- Reanalyzing samples, if holding time criteria permit.
- Resampling and analyzing.
- Re-measuring parameter.
- Evaluating and amending sampling and analytical procedures.
- Qualifying data to indicate the level of uncertainty.

During field sampling operations, the project manager and field staff will be responsible for identifying and correcting protocols that may compromise the quality of the data. All corrective actions taken will be documented in the field notes.

11.0 DOCUMENTATION AND RECORDS

Project files and raw data files will be maintained at SoundEarth's office. Project records will be stored and maintained in a secure manner. Each project team member is responsible for filing all necessary project information or providing the information to the person responsible for the filing system. Individual team members may maintain files for individual tasks, but team members must provide such files to the central project files upon completion of each task. A project-specific index of file contents will be kept with the project files. Hard copy documents will be kept on file at SoundEarth or at a document storage facility throughout the duration of the project, and all electronic data will be maintained in the database at SoundEarth. All sampling data will be submitted to Ecology in both printed and electronic formats pursuant to WAC 173-340-840(5) and Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements).

11.1 FIELD DOCUMENTATION

Documentation of field activities will be included on Field Report forms, Boring Log forms, Sample ID Labels, Soil Sample Summary form, Waste Material Labels, Drum Inventory forms, Material Import and Export Summary forms, and Sample Chain of Custody forms, examples of which are provided in Attachment A. Field forms will be scanned and saved to an electronic project folder. Original and copied forms will be filed in a binder that will be maintained by the project manager.

Field personnel will be required to keep a daily field log on a Field Report form. Field notes will be as descriptive and as inclusive as possible, allowing independent parties to reconstruct the sampling situation from the recorded information. Language will be objective, factual, and free of inappropriate terminology. A summary of each day's events will be completed on a Field Report form. At a minimum, field documentation will include the date, job number, project identification and location, weather conditions, sample collection data, personnel present and responsibilities, field equipment used, and

activities performed in a manner other than specified in the SAP. In addition, if other forms are completed or used (e.g., Sample Chain of Custody form), they will be referred to in and attached to the Field Report form. Field personnel will sign the Field Report form. An example of the Field Report form is included in Attachment A.

11.2 ANALYTICAL RECORDS

Analytical data records will be retained by the laboratory and stored electronically in the SoundEarth project file and project database. For all analyses, the data reporting requirements will include those items necessary to complete data validation, including copies of all raw data. The analytical laboratory will be required to report the following, as applicable: project narrative, chain-of-custody records, sample results, QA/QC summaries, calibration data summary, method blank analysis, surrogate spike recovery, matrix spike recovery, matrix duplicate, and laboratory control sample(s).

12.0 HEALTH AND SAFETY PROCEDURES

Field personnel will adhere to health and safety procedures that will be detailed in the HASP, which is included as Appendix F of the RI/CAP Report. The health and safety and emergency response protocols outlined in the HASP are designed to ensure compliance with state and federal regulations governing worker safety on hazardous waste sites. The U.S. Department of Labor has published final rules (Part 1910.120 of Title 29 of the Code of Federal Regulations, March 6, 1990) that amend the existing Occupational Safety and Health Administration standards for hazardous waste operations and emergency response. Within Washington State, these requirements are addressed in WAC 296-843, Hazardous Waste Operations. These regulations apply to the activities to be performed at this Site as a site remediation, or cleanup, under Resource Conservation and Recovery Act 1976 and/or MTCA.

Subcontractors to SoundEarth are required to prepare and effectively implement their own HASP based on their unique scope of work and professional expertise. Each subcontractor's HASP must comply with all applicable federal, state, and local regulations. The subcontractor's HASP should employ appropriate best practices to protect all personnel working on the Site, as well as the public, and to prevent negative impacts to the project or Site.

The responsibilities of SoundEarth for safety on this Site are limited to the following:

- Implementation of the provisions of this HASP for the protection of its employees and visitors on the Site to the extent that the Site and its hazards are under the control of SoundEarth.
- Protection of the Site, other personnel, and the public from damage, injury, or illness as a result of the activities of SoundEarth and its employees while on the Site.
- Provision of additional safety-related advice and/or management as contractually determined between the parties.

It is anticipated that all field work will be performed during the cleanup action in Level D personal protective equipment. Potential hazards that may be encountered during the cleanup action field activities include exposure to contaminants; traffic/mobile equipment; process hazards; unstable ground; noise exposure; overhead and underground utilities; slips, trips, and falls; powered tools and equipment; working around heavy equipment; rolling and/or pinching objects; and exposure to weather conditions.

13.0 REFERENCES

U.S. Environmental Protection Agency (EPA). 1998. *Guidance Document for Quality Assurance Project Plans.* Publication EPA QA/G-5, EPA/600/R-98/018.

_____. 2002. *Guidance on Environmental Data Verification and Data Validation.* EPA QA/G-8.

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_____. 2007. *Test Methods for Evaluating Solid Wastes, Laboratory Manual Physical/Chemical Methods.* Final Update IV. EPA SW-846.

_____. 2008. *National Contract Laboratory Review Program, National Functional Guidelines for Organic Data Review.* EPA 540/R-99/008.

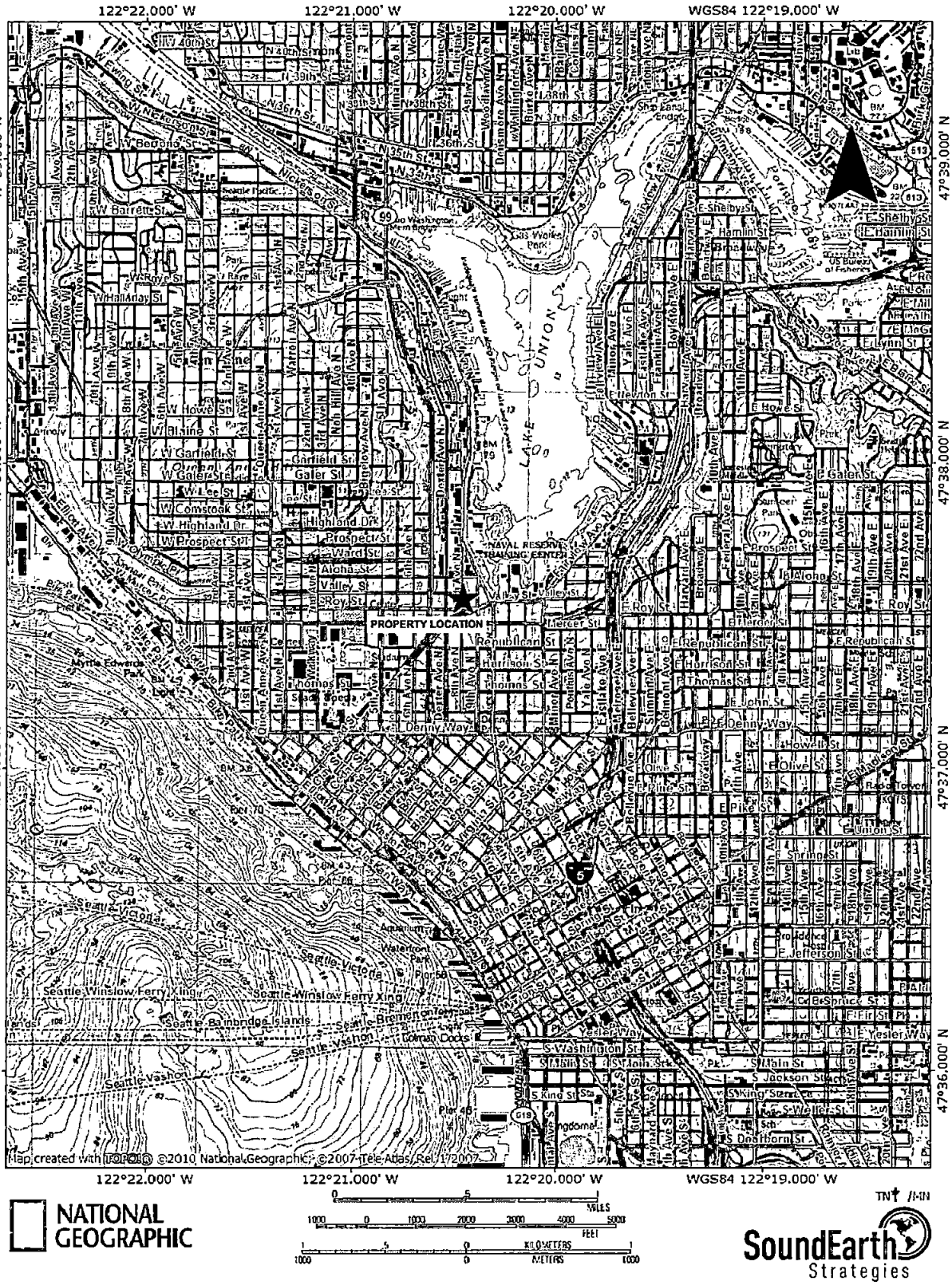
Washington State Department of Ecology (Ecology). 2003. *Guidance for Site Checks and Site Assessment for Underground Storage Tanks.* Publication No. 90-52.

_____. 2004. *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies.* Publication No. 04-03-030.

_____. 2011. *Guidance for Remediation of Petroleum Contaminated Sites.* Publication No. 10-09-057. Revised October.

FIGURES

8/5/2015



SoundEarth Strategies

WWW.SOUNDEARTHINC.COM

BUCA DI BEPPO/ DUCATI PROPERTY
1154-001-01
701 9TH AVENUE NORTH
SEATTLE, WASHINGTON

FIGURE F-1
PROPERTY LOCATION MAP

P:\1154 BUCA DI BEPPO\1154-001 BUCA DI BEPPO\TECHNICAL\CAD\2015\SAP\0996-007_2014SSI_FIG01_VIC_F.DWG

8/5/2015

ALLEY WAY

SUSPECT WASTE OIL UST (HART CROWSER, 1988) ENVIROS, 1992)

HEATING FUEL FILL AND VENT PIPES

OIL/WATER SEPARATOR

N

0 10 20

APPROXIMATE SCALE IN FEET

FORMER BOILER ROOM (BASEMENT)

MW1

ROY STREET

SIDEWALK

ABANDONED 8" SEWER LINE

WALL

GARAGE

FORMER PIT

SUSPECT UST FILL PORT

FORMER CATCH BASIN

FORMER MACHINE SHOP

A B C D E F G

9 8 7 6 5 4 3 2 1

SIDEWALK

NINTH AVENUE NORTH

B-6

LEGEND

- MW01 — MONITORING WELL (ENVIROS, 1992)
- MW-1 — MONITORING WELL (HART CROWSER, 1988)
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- SEWER LINE
- STORMWATER LINE
- CONSTRUCTION EXCAVATION EXTENT
- PROPOSED REMEDIAL EXCAVATION AREAS
- UST — UNDERGROUND STORAGE TANK
- FORMER HYDRAULIC LIFTS
- ESTIMATED AREA OF SOILS REQUIRING SUBTITLE D LANDFILL (CATEGORY 3, 4) DISPOSAL
- ESTIMATED AREA OF SOIL REQUIRING CATEGORY 2 SOIL DISPOSAL

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BUCA DI BEPPO/DUCATI
701 9TH AVENUE NORTH
SEATTLE, WASHINGTON
SOUNDEARTH PROJECT #1154-001

FIGURE F-2
PROPOSED REMEDIAL EXCAVATION AREA AND SOIL SAMPLING GRID

P:\1154 BUCA DI BEPPO\1154-001 BUCA DI BEPPO\TECHNICAL\CAD\2015\SAP\1154-001 FIG6.DWG

TABLES

SoundEarth Strategies

Table F-1
Preliminary Project Schedule
Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington

Task/Scope of Work[1]	Schedule
Task 1: Prefield Activities, including Site Preparation and Mobilization	
Task 2: Building Demolition and Underground Storage Tank Decommissioning	
Task 3: Well Decommissioning	
Task 4: Shoring Installation	
Task 5: Excavation	
Task 6: Impermeable Foundation Installation	
Task 7: Cleanup Action Report	

NOTE:

[1]Timing and conduct of the tasks will be determined by City of Seattle Entitlements process/issuance of the building permit, as well as any pre-leasing or financial requirements/limitations. Site closure will be determined based on the results of compliance monitoring events.

SoundEarth Strategies

Table F-2
Key Personnel and Responsibilities
Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington

Project Title	Name	Project Role	Organization	Mailing Address	Email Address	Phone
Regulatory Agency		Regulatory project management. Reviews and approves all submittals to Washington State Department of Ecology.	Washington State Department of Ecology	3190 160th Avenue Southeast Bellevue, Washington 98008		
Project Contact		Property owner and project contact.	W-T 701 Holdings VII, L.L.C.	c/o Talon 720 Olive Way, Suite 1020 Seattle, Washington 98101		
Project Principal	John Funderburk	Reviews and oversees all project activities. Reviews all data and deliverables prior to submittal to project contact or Washington State Department of Ecology.	SoundEarth Strategies, Inc.	2811 Fairview Avenue South Suite 2000 Seattle, Washington 98102	jfunderburk@soundearthinc.com	206-306-1900
Project Manager	Chuck Cacek	Overall project management, including SAP development, field oversight, document preparation and submittal, and project coordination.	SoundEarth Strategies, Inc.	2811 Fairview Avenue South Suite 2000 Seattle, Washington 98102	ccacek@soundearthinc.com	206-306-1900
Laboratory Project Manager	Michael Erdahl	Provides analytical support and will be responsible for providing certified, precleaned sample containers and sample preservatives (as appropriate) and for ensuring that all chemical analyses meet the project quality specifications detailed in the SAP.	Friedman & Bruya, Inc.	3012 16th Avenue West Seattle, Washington 98119	merdahl@friedmanandbruya.com	206-285-8282
Project QA/QC Officer		Coordinates with laboratory to ensure that SAP requirements are followed and that laboratory QA objectives are met.	SoundEarth Strategies, Inc.	2811 Fairview Avenue South Suite 2000 Seattle, Washington 98102		206-306-1900
Field Coordinator		Reports to the project manager. Ensures all project health and safety requirements are followed; coordinates and participates in the field sampling activities; coordinates sample deliveries to laboratory; coordinates sampling activities with site owner and subcontractors; reports any deviations from project plans.	SoundEarth Strategies, Inc.	2811 Fairview Avenue South Suite 2000 Seattle, Washington 98102		206-306-1900
Field Staff	Various licensed geologists and environmental professionals	Reports to field coordinator. Conducts sampling activities.	SoundEarth Strategies, Inc.	2811 Fairview Avenue South Suite 2000 Seattle, Washington 98102		206-306-1900
Site Superintendent/General Contractor		Manages the construction excavation activities throughout the duration of the redevelopment project.				

NOTES:
QA/QC = quality assurance/quality control
SAP = Sampling Analysis Plan

SoundEarth Strategies

Table F-3
Analytical Methods, Container, Preservation, and Holding Time Requirements
Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington

Analyte and Analytical Method	Size and Type of Container	Number of Containers	Preservation Requirements	Holding Time (extraction/analysis)
Soil Samples				
GRPH by Method NWTPH-Gx	40-mL VOA	3	4°C/-7°C at the laboratory	48 hours/14 days
DRPH and ORPH by Method NWTPH-Dx	4-oz jar	1	4°C	14 days/40 days
Lead by EPA Method 200.8	4-oz jar	1	4°C	6 months
Mercury by EPA Method 7471	4-oz jar	1	4°C	28 days

NOTES:
°C = degrees Celsius
DRPH = diesel-range petroleum hydrocarbons
EPA = U.S. Environmental Protection Agency
GRPH = gasoline-range petroleum hydrocarbons
mL = milliliter
NWTPH = Northwest Total Petroleum Hydrocarbon
ORPH = oil-range petroleum hydrocarbons
oz = ounce
VOA = volatile organic analysis

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Table F-4
Analytes, Analytical Methods, Laboratory Practical Quantitation Limits, and Applicable Regulatory Limits
Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington

Analyte	Analytical Method	Unit	Laboratory PQL[1]	Applicable Regulatory Limit[2]
Soil				
GRPH	NWTPH-Gx	mg/kg	<2	30/100[3]
DRPH	NWTPH-Dx	mg/kg	<50	2,000
ORPH	NWTPH-Dx	mg/kg	<250	2,000
Lead	EPA Method 200.8	mg/kg	<0.1	250
Mercury	EPA Method 7471	mg/kg	<0.1	2

NOTES:

[1]Standard laboratory PQLs for Friedman & Bruya, Inc.

[2]MTCA Method A or B Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

[3]Cleanup levels for gasoline in soil that also contain benzene are 30 mg/kg and 800 µg/L, respectively.

< = less than

µg/L = micrograms per liter

DRPH = diesel-range petroleum hydrocarbons

EPA = U.S. Environmental Protection Agency

GRPH = gasoline-range petroleum hydrocarbons

mg/kg = milligrams per kilogram

NWTPH = Northwest Total Petroleum Hydrocarbon

ORPH = oil-range petroleum hydrocarbons

PQL = practical quantitation limit

SoundEarth Strategies

Table F-5
Quantitative Goals of Data Quality Objectives
Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington

Analyte	Analytical Method	Precision[1]	Accuracy[2]			Completeness[3]	Sensitivity[4]
		RPD (%)	Surrogate (% Recovery)	Matrix Spike (% Recovery)	LCS (% Recovery)	(%)	PQL[5]
Soil							
GRPH	NWTPH-Gx	20	50-150	50-150	50-150	95	<2
DRPH	NWTPH-Dx	20	50-150	50-150	50-150	95	<2
ORPH	NWTPH-Dx	20	50-150	50-150	50-150	95	<2
Lead	EPA Method 200.8	20	50-150	50-150	50-150	95	<0.1
Mercury	EPA Method 7471	20	50-150	50-150	50-150	95	<0.1

NOTES:

[1]Precision measured in RPD between sample and lab duplicate, LCS and LCS duplicate, and/or MS and MS duplicate.

[2]Laboratory analyses to be in accordance with the EPA SW-846 and Ecology methods and procedures for inorganic and organic chemical analyses. Method Blanks will be analyzed for each analyte in addition to the quantitative data quality objectives listed in this table.

[3]Refers to the minimum acceptable percentages of samples received at the laboratory in good condition that are acceptable for analysis.

[4]Sensitivity is measured by the laboratory PQL for each analyte.

[5]Standard PQLs for Friedman & Bruya, Inc., standard PQLs.

< = less than
DRPH = diesel-range petroleum hydrocarbons
Ecology = Washington State Department of Ecology
EPA = U.S. Environmental Protection Agency
GRPH = gasoline-range petroleum hydrocarbons
LCS = laboratory control sample
NWTPH = Northwest Total Petroleum Hydrocarbon Method
ORPH = oil-range petroleum hydrocarbons
PQL = practical quantitation limit
RPD = relative percent difference

ATTACHMENT A
FIELD FORMS

SoundEarth Strategies

Soil Sample Summary Form
Project ID
Project Address

Project Name :
Project Number:

Sample Name	Date Collected	Time Collected	Location	Depth (feet)	PID (ppm)	Odors	Observations	Analytical Result (mg/kg)

FRIEDMAN & BRUYA, INC.	
Client:	
Sample ID:	
Date Sampled:	Time:
Project:	
Analysis Request:	
Preservative:	

NON HAZARDOUS WASTE

GENERATOR INFORMATION (Optional)

SHIPPER _____

ADDRESS _____

CITY, STATE, ZIP _____

CONTENTS _____

SoundEarth Strategies

Material Import and Export Summary
Project Name
Project Address

Truck Company	Truck Number	Date	Time	Volume (note: tons or yards)	Type of Material	Destination of Material

HAZARDOUS WASTE

ACCUMULATION
START DATE _____

CONTENTS _____

HANDLE WITH CARE!

CONTAINS HAZARDOUS OR TOXIC WASTES

SoundEarth Strategies
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102
P: (206) 306-1900 F: (206) 306-1907

FIELD REPORT

Client & Site Name/Number:		SoundEarth Project Number:	Date:
Site Address:		Purpose of Visit/Task #:	Field Report Prepared by:
Temp/Weather:	Permit Required to Work:	Time of Arrival/Departure (2400): ____ onsite to ____ offsite	Personnel Onsite:

Attachments:

SAMPLE CHAIN OF CUSTODY

Send Report to _____

Company SoundEarth Strategies, Inc.

Address 2811 Fairview Avenue E, Suite 2000

City, State, ZIP Seattle, WA 98102

Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS *(signature)*	
PROJECT NAME/NO.	PO #
REMARKS	

Page # _____ of _____

TURNAROUND TIME
Standard (2 Weeks)
RUSH _____
Rush charges authorized by:
_____

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of Jars	ANALYSES REQUESTED								
								DRPH & ORPH by NWTPH-Dx	GRPH by NWTPH-Gx	VOCs by EPA 8260C	RCRA 8 Metals by EPA 200.8 & 1631E					Notes

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

SoundEarth Strategies

DRUM INVENTORY SHEET

Site Name: _____
Site Address: _____
Reason for Site Visit: _____
Date of Inventory: _____
Field Personnel: _____

Drum #[1] (eg. 001)	Content Information	Date(s) Accumulated	Fullness (%)	Sample Analysis Performed?	Composite Soil Sample (RCRA 8 metals)[2] (Y/N)	Saturated Soil[3] (Y/N)	Drum Labeled (Y/N)	Drum Location Photo (Y/N)	Drum Access[4]
Eg. 001	Soil, B05, 5'-15'	2/3/10	100%	Gx, BTEX	Y	N	Y	Y	Combo lock #xxxx
Eg. 002	Purge Water	2/3/10	100%	Gx, BTEX	N/A	N/A	Y	Y	Combo lock #xxxx

NOTES:
[1]Drum #— Write the Drum # on the drum lid, as well as on the non-hazardous or hazardous waste labels.
[2]Composite Soil Sample—For all sites, collect one composite soil sample from each drum onsite. Place sample on hold at the laboratory, for future RCRA 8 metals analysis. Collect sample in one-4 ounce jar.
[3]Saturated soil—Add bentonite chips or kitty litter to the water that has accumulated or may accumulate inside the drum. Bentonite chips available in the garage.
[4]Drum access for pickup—(eg. fenced, owner notification, lock combination?)

SoundEarth Strategies

Project:
Project Number:
Logged by:
Date Started:
Surface Conditions:
Well Location N/S:
Well Location E/W:
Reviewed by:
Date Completed:

BORING LOG

Site Address:

Water Depth At Time of Drilling: feet bgs
Water Depth After Completion: feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppm)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30									
35									
40									
45									

Drilling Co./Driller:
Drilling Equipment:
Sampler Type:
Hammer Type/Weight: lbs
Total Boring Depth: feet bgs
Total Well Depth: feet bgs
State Well ID No.:

Well/Auger Diameter: inches
Well Screened Interval: feet bgs
Screen Slot Size: inches
Filter Pack Used:
Surface Seal:
Annular Seal:
Monument Type:

Notes/Comments:

Page:

SoundEarth Strategies

Project:
Project Number:
Logged by:
Date Started:
Surface Conditions:
Well Location N/S:
Well Location E/W:
Reviewed by:
Date Completed:

BORING LOG

Site Address:

Water Depth At Time of Drilling: feet bgs
Water Depth After Completion: feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppm)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15									
20									
25									
30									

Drilling Co./Driller:
Drilling Equipment:
Sampler Type:
Hammer Type/Weight: lbs
Total Boring Depth: feet bgs
Total Well Depth: feet bgs
State Well ID No.:

Well/Auger Diameter: inches
Well Screened Interval: feet bgs
Screen Slot Size: inches
Filter Pack Used:
Surface Seal:
Annular Seal:
Monument Type:

Notes/Comments:

Page:

SoundEarth Strategies

Project:
Project Number:
Logged by:
Date Started:
Surface Conditions:
Well Location N/S:
Well Location E/W:
Reviewed by:
Date Completed:

BORING LOG

Site Address:

Water Depth At Time of Drilling: feet bgs
Water Depth After Completion: feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppm)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0									
5									
10									
15									

Drilling Co./Driller:
Drilling Equipment:
Sampler Type:
Hammer Type/Weight: lbs
Total Boring Depth: feet bgs
Total Well Depth: feet bgs
State Well ID No.:

Well/Auger Diameter: inches
Well Screened Interval: feet bgs
Screen Slot Size: inches
Filter Pack Used:
Surface Seal:
Annular Seal:
Monument Type:

Notes/Comments:

Page:

ATTACHMENT B

TABLE 6.9 FROM ECOLOGY'S *GUIDANCE FOR REMEDIATION OF PETROLEUM CONTAMINATED SITES,* DATED SEPTEMBER 2011

Table 6.9 Typical Number of Samples Needed to Adequately Characterize Stockpiled Soil (1)	
Cubic Yards of Soil	**Number of Samples for Chemical Analysis**
0-100	3
101-500	5
501-1000	7
1001-2000	10
>2000	10 + 1 for each additional 500 cubic yards
(1) Source: 1995 Guidance for Remediation of Petroleum Contaminated Soil.	

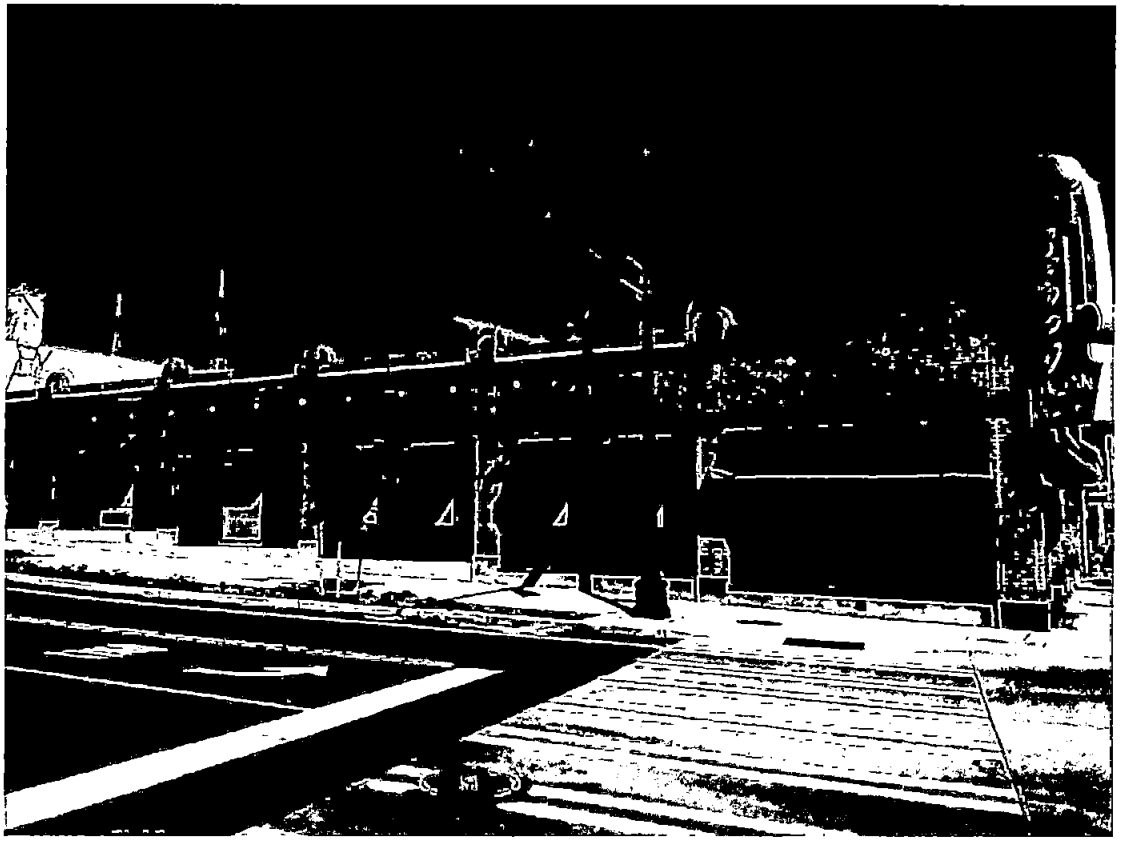
APPENDIX G

SITE-SPECIFIC HEALTH AND SAFETY PLAN

SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102

SITE-SPECIFIC HEALTH AND SAFETY PLAN

APPENDIX G OF THE REMEDIAL INVESTIGATION AND CLEANUP ACTION PLAN



Property:
Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington

Prepared for:
W-T 701 Holdings VII, L.L.C.
c/o Talon
720 Olive Way, Suite 1020
Seattle, Washington

Initiation Date: November 19 2015
Expiration Date: November 19, 2016

SITE-SPECIFIC HEALTH AND SAFETY PLAN

Prepared for:

W-T 701 Holdings VII, L.L.C.
c/o Talon
720 Olive Way, Suite 1020
Seattle, Washington 98101

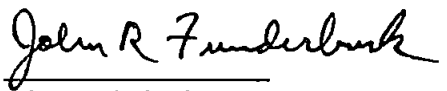
Buca di Beppo/Ducati Property
701 9th Avenue North
Seattle, Washington 98109

Project No.: 1154-001-01

Prepared by:

Charles Cacek, LEG
Associate Geologist

Reviewed by:



John Funderburk, MSPH
Principal

Initiation Date: November 19, 2015
Expiration Date: November 19, 2016

SoundEarth Strategies

HAZARD SUMMARY

SoundEarth Strategies, Inc. (SoundEarth) has prepared this Site-Specific Health and Safety Plan (HASP) for the Buca Di Beppo/Ducati Property located at 701 9th Avenue North in Seattle, Washington (the Property). The Site-Specific HASP was written in general accordance with the Washington State Model Toxics Control Act (MTCA) as promulgated in Chapter 173-340-350 of the Washington Administrative Code.

SITE DESCRIPTION

The current tenants of the Property are the Buca di Beppo Italian restaurant (southern tenant space) and Ducati motorcycle sales and service (northern tenant space). The northernmost portion of the on-Property building is currently used as a parking garage. It appears that the Property was historically inundated by Lake Union and was artificially filled sometime between 1908 and 1912. The Property was initially developed in 1922 with the existing commercial building and was in use as an automotive/truck repair shop by the 1920s until at least 1969. The existing northern tenant space has continued to be used for parking and vehicle repair activities since 1969. The truck and vehicle repair facilities included the historical use of sumps, a potential greasing pit, hydraulic hoists, and a waste oil/heating oil underground storage tank (UST). A portion of the building was in use as an automotive dealership by 1989.

Petroleum hydrocarbon-impacted soil exceeding MTCA Method A cleanup levels was documented by multiple environmental investigations conducted on and around the Property since 1988. Soil containing concentrations of gasoline-, diesel-, and oil-range petroleum hydrocarbons, lead, and mercury in excess of their MTCA Method A cleanup levels has been identified in the area of the hydraulic lift system in the western portion of the building, proximal to a heating oil/waste oil UST in the western portion of the building, and proximal to the former waste oil sump in the northwestern portion of the building on the Property.

Groundwater containing concentrations of diesel-range petroleum hydrocarbons in excess of the MTCA Method A cleanup level has been observed in the northern portion of the Property. The source of the groundwater contamination has not been determined.

In addition, based on publicly available findings, it is likely that groundwater contaminated with chlorinated solvents has migrated on to the Property from the hydrologically upgradient American Linen Supply Co. property located at 700 Dexter Avenue North, approximately 200 feet west of the Property. The chlorinated solvent plume is likely a result of former laundry operation on that property.

FIELD ACTIVITIES

The following field activities are covered under this Site-Specific HASP:

- Demolition observation
- Soil sampling
- UST decommissioning and soil excavation observation
- Groundwater sampling and monitoring

HAZARD SUMMARY (CONTINUED)

SITE HAZARDS

Hazards present at the site include the following:

Chemical

- Diesel-range petroleum hydrocarbons in soil and groundwater.
- Gasoline-range petroleum hydrocarbons in soil.
- Oil-range petroleum hydrocarbons in soil.
- Lead in soil.
- Mercury in soil.
- Tetrachloroethylene and its daughter products (trichloroethylene, vinyl chloride, and cis-1,2-dichloroethylene) in groundwater.

Physical

- Dust
- Excavation collapse
- Heavy equipment/moving machinery
- Noise Exposure
- Overhead utilities and features
- Slips, trips, and falls
- Traffic and moving equipment
- Underground utilities and features
- Unsecured/uncontrolled site

HAZARD CONTROLS

The following additional hazard controls, based on the tasks identified in the Field Activities above, are required for employees of SoundEarth while performing work on the site:

- Work clothing or coveralls.
- Level D personal protective equipment, which includes gloves (task-specific), steel-toed boots, safety glasses, and a reflective safety vest.
- Traffic control, lighting, hard hats, and hearing protection when appropriate.

This hazard summary is presented solely for introductory purposes, and the information contained in this section should be used only in conjunction with the full text of this report. A complete description of the project, site conditions, investigation methods, and investigation results can be found in previous reports referenced in Section 4.1.4, Reports that Provide Chemical Analytical Results.

TABLE OF CONTENTS

FIGURES

ATTACHMENTS

1.0 INTRODUCTION

SoundEarth Strategies, Inc. (SoundEarth) has prepared this Site-Specific Health and Safety Plan (HASP) for the Buca di Beppo/Ducati Property located at 701 9th Avenue North in Seattle, Washington (the Property). HASP was written for the use of SoundEarth and its employees. The health and safety and emergency response protocols outlined in this plan are designed to ensure compliance with state and federal regulations governing worker safety on hazardous waste sites. The Department of Labor has published final rules (Part 1910.120 of Title 29 of the Code of Federal Regulations, March 6, 1990) that amend the existing Occupational Safety and Health Administration standards for hazardous waste operations and emergency response. Within Washington State, these requirements are addressed in Chapter 296-843 of the Washington Administrative Code, Hazardous Waste Operations. These regulations apply to the activities to be performed at this site as a site environmental investigation, remediation, or cleanup, under one or more of the following: the Federal Resource Conservation and Recovery Act of 1976; the Comprehensive Environmental Response, Compensation, and Liability Act of 1980; and the Washington State Model Toxics Control Act (MTCA).

Subcontractors to SoundEarth are required to prepare and effectively implement their own HASP based on their unique scope of work and professional expertise. Each subcontractor's HASP must comply with all applicable federal, state, and local regulations. The subcontractor's HASP should employ appropriate best practices to protect all personnel working on the site, as well as the public, and to prevent negative impacts to the project or site.

The responsibilities of SoundEarth for safety on this site are limited to the following:

- **Implementation** of the provisions of this HASP for the protection of its employees and visitors on the site to the extent that the site and its hazards are under the control of SoundEarth.
- **Protection of the site**, other personnel, and the public from damage, injury, or illness as a result of the activities of SoundEarth and its employees while on the site.
- **Provision** of additional safety-related advice and/or management as contractually determined between the parties.

This plan is active for this site until 1 year from the date of the HASP or until SoundEarth implements a scope of work change not covered by this HASP, whichever comes first, after which time it must be reviewed and extended.

NOTE: Reference identifications (01, Project Safety Responsibilities, through 25, Demolition) incorporated into this Site-Specific HASP refer to the *HASP Reference Manual*, prepared by SoundEarth and dated December 2013, which is a stand-alone document that compiles detailed information and instructions for protecting SoundEarth employees from chemical and physical hazards applicable to this Site-Specific HASP. The *HASP Reference Manual* and this Site-Specific HASP **MUST** be present at the site during field activities.

2.0 SITE INFORMATION

Site Name: Buca Di Beppo/Ducati Property
Site Address: 701 9th Avenue North, Seattle, Washington
Site Owner: W-T 701 Holdings VII, L.L.C.
Site Tenant: Buca Di Beppo restaurant, Ducati motorcycle dealership
Nature of Activities at this Site: Current: Restaurant, motorcycle dealership Past: Vehicle repair and sales
Figures G-1 and G-2 show the site location and features.

3.0 PROJECT ROLES AND EMERGENCY INFORMATION

On-site personnel shall acknowledge that they have reviewed a copy of the HASP for this project, that they understand it, and that they agree to comply with all of its provisions by signing and dating the Acknowledgment and Agreement Form in Attachment A.

A daily health and safety tailgate meeting shall take place at the start of every day in the field. All on-site personnel are to attend this meeting and print and sign their name on the attached Daily Health and Safety Briefing Log in Attachment B. Reference 01, Project Safety Responsibilities, provides more information.

Project Roles and Phone Numbers		
Title	**Name**	**Phone Number**
Project Manager	Chuck Cacek	O: 206-436-5904 C: 206-300-6237
Site Health and Safety Officer	Elizabeth Forbes	O: 206-306-1900 C: 802-238-3203
Principal-in-Charge	John Funderburk	O: 206-436-5933 C: 425-922-9922
Corporate Health and Safety Administrator	John Funderburk	O: 206-436-5933 C: 425-922-9922
Certified Industrial Hygienist working for SoundEarth	Michelle Copeland	O: 206-612-6355
General Contractor Site Representative	Bill Gormley	O: 206-622-0500
Client/Owner/Operator Representative	Charlie Foushee	O: 206-607-2572 C: 425-6810406

On-site personnel are responsible for initiating emergency response actions, as necessary, and reporting any potentially hazardous conditions they encounter to the Corporate Health and Safety Administrator and initiating site evacuation procedures. **For a critical emergency, any SoundEarth employee should call 911.** Reference 02, Emergency Response Plan, provides more information.

Note: A SoundEarth employee MAY NOT transport a non-SoundEarth employee off of the site for medical attention.

The following list of emergency phone numbers and the location and driving directions to the nearby hospital must be posted at the site (Attachment C, Hospital Routes).

Local Emergency Services and Phone Numbers		
Institution/Department	**Name/Address**	**Phone Number**
Hospital	Harborview Medical Center Emergency Department 325 9th Avenue Seattle, Washington	911 or 206-744-3000
Alternative Hospital	Virginia Mason Hospital 1100 9th Avenue Seattle, Washington	911 or 206-223-6881
Ambulance	--	911
Police/Sheriff	Seattle Police Department 810 Virginia Street Seattle, Washington	911 or 206-684-8917
Fire	Seattle Fire Department, Station 5 925 Alaskan Way Seattle, Washington	911 or 206-386-1400

4.0 SITE HAZARD ANALYSIS

This section is used to determine the project's potential health and safety hazards specifically as they relate to the site where the work will occur. Task-related hazards are analyzed in Section 5.0, Task-Related Site Hazard Analysis.

4.1 SITE HAZARD ANALYSIS—CHEMICAL

This section describes and identifies potential and known chemical hazards that may be encountered while working at the site (summarized in Table 1: Chemical Hazards). Reference 03, Chemical Hazards Analysis, provides information on the process for identifying chemical hazards at a site.

4.1.1 Past Opportunities for Chemical Contamination

The Property was in use as an automotive/truck repair shop by the 1920s until at least 1969. The existing northern tenant space has continued to be used for parking and vehicle repair activities since 1969. The truck and vehicle repair facilities included the historical use of sumps, a potential greasing pit, hydraulic hoists, and a waste oil/heating oil underground storage tank

(UST). Subsurface investigations have confirmed the presence of petroleum-contaminated soil and groundwater beneath the northern portion of the Property.

4.1.2 Opportunities for Unknown or Unidentified Chemical Contamination

The following are potential sources of unknown or unidentified chemical contamination at the site:

- Investigations on the west-adjacent Roy Street Shops property have confirmed the presence of petroleum hydrocarbons in soil and groundwater associated with former UST systems on that property. The extent of subsurface impacts is currently unknown, thus the potential for migration of this contamination onto the Property exists.
- Investigations on the nearby American Linen Supply Co. property have confirmed the presence of solvent- and petroleum-contaminated soil and groundwater associated with former laundry and vehicle refueling operations on that property. While the petroleum contamination has been shown to not extend beyond 8th Avenue North, approximately 140 feet west of the Property, it is likely that solvent-contaminated groundwater has migrated beneath the Property.

4.1.3 Summary of Potential Chemical Hazards

The following known or suspected chemical hazards have been identified at the Property:

- Diesel-range petroleum hydrocarbons in soil and groundwater
- Gasoline-range petroleum hydrocarbons in soil
- Oil-range petroleum hydrocarbons in soil
- Lead in soil
- Mercury in soil
- Tetrachloroethylene and its daughter products (trichloroethylene, vinyl chloride, and cis-1,2-dichloroethylene) in groundwater

The chemicals identified above are included in Table 1: Chemical Hazards.

4.1.4 Reports that Provide Chemical Analytical Results

The following report and associated tables containing chemical analytical data have been prepared for the site:

- *Subsurface Investigation Report*, Buca di Beppo/Ducati Property, 701 9th Avenue North, Seattle, Washington by SoundEarth Strategies, Inc., October 7, 2014.
  - Table 1, Summary of Soil Analytical Results
  - Table 2, Summary of Historical Groundwater Analytical Results

TABLE 1: CHEMICAL HAZARDS

Chemical or Class (Synonyms or Isomers)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits / Special Characteristics	Routes of Exposure / Warning Properties	Exposure Symptoms	Target Organs / First Aid	Recommended PPE / Respiratory Protection	Recommended Monitoring
Asbestos	DOSH PEL: 0.1 fiber/cm^3 TWA 1.0 fiber/cm^3 over 30-minute sampling period	NIOSH REL: None Carcinogen	Inhalation, ingestion, skin and eye contact White/greenish (chrysotile), blue (crocidolite), or gray-green (amosite) fibrous, odorless solids	Eye irritation, Asbestiosis, breathing difficulty, interstitial fibrosis, restricted pulmonary function, finger clubbing (Carcinogen)	Eyes, Respiratory system Eyes: Irrigate Immediately Respiratory: Fresh air	▪ Impermeable, disposable clothing ▪ Nitrile or Neoprene gloves Required: Full Face SA respirator in with PP/PD mode If PEL is exceeded: min Full Face AP/HEPA	If potential for exposure exists: ▪ Initiate personal air monitoring; additional monitoring if necessary based on initial results ▪ Verify method with laboratory prior to ordering media and equipment
Benzene	DOSH PEL: 1 ppm TWA 5 ppm STEL DOSH AL: 0.5 ppm TWA	NIOSH REL: 0.1 ppm TWA 1 ppm STEL IDLH: 500 ppm FP: 12°F LEL: 1.2% Carcinogen	**Inhalation, ingestion, skin absorption, eye contact** Aromatic odor	Irritation of eyes, skin, nose, respiratory system; dizziness; headache; staggered gait; nausea; weakness and exhaustion; bone marrow depression (Carcinogen)	Eyes, skin, respiratory system, blood, central nervous system, bone marrow Eye: Irrigate immediately Skin: Soap wash promptly Inhalation: Respiratory support Ingestion: Medical attention immediately	▪ Impermeable, disposable clothing ▪ Nitrile or Neoprene gloves ▪ Min ½ Mask AP/HEPA If PEL is exceeded: min full-face SA respirator in PP/PD mode; Higher APF per results of air monitoring	If potential for exposure exists: ▪ Initiate personal air monitoring; additional monitoring if necessary based on initial results ▪ Verify method with laboratory prior to ordering media and equipment Real Time Monitoring Equipment: ▪ Detector Tube ▪ 10.2 or 10.6 eV PID

Chemical or Class (Synonyms or Isomers)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits Special Characteristics	Routes of Exposure Warning Properties	Exposure Symptoms	Target Organs First Aid	Recommended PPE Respiratory Protection	Recommended Monitoring
1,2-DCE (1,2-Dichloroethylene; includes cis- or trans-isomers)	DOSH PEL: 200 ppm TWA 250 ppm STEL	NIOSH REL: 200 ppm TWA IDLH: 1,000 ppm FP: 36–39°F LEL: 5.6% None	Inhalation, ingestion, skin or eye contact Slightly acidic, chloroform-like odor	Eye and respiratory system irritation, central nervous system depression	Eyes, respiratory system, central nervous system Eye: Irrigate immediately Skin: Soap wash promptly Inhalation: Respiratory support Ingestion: Medical attention immediately	▪ Impermeable, chemical-resistant, disposable clothing ▪ Silver Shield/composite glove If PEL is exceeded: min SA continuous flow or PAPR OV cartridge	If potential for exposure exists: ▪ Initiate personal air monitoring; additional monitoring if necessary based on initial results ▪ Verify method with laboratory prior to ordering media and equipment Real Time Monitoring Equipment: ▪ Detector Tubes ▪ 10.2 or 10.6 eV PID
DRPH (As Diesel Fuel #2 and petroleum distillates)	DOSH PEL: 100 ppm TWA 150 ppm STEL OSHA PEL: 500 ppm TWA	NIOSH REL: 86 ppm TWA 444 ppm STEL ACGIH TLV: 100 mg/m^3 TWA IDLH: 1,100 ppm FP: -40 to -86°F LEL: 1.1% Carcinogen Combustible liquid	Inhalation, ingestion, skin or eye contact Gasoline or kerosene-like odor Floats on water Clear, yellow-brown liquid	Irritation of eyes, nose, throat; dizziness; drowsiness; headache; nausea; dry cracked skin; inflammation of lungs; dermatitis; skin reddening	Eyes, skin, respiratory system, central nervous system, kidneys Breathing: Respiratory support	▪ Impermeable, chemical-resistant, disposable clothing ▪ Nitrile or neoprene gloves If PEL is exceeded: any SA respirator	If potential for exposure exists: ▪ Initiate personal air monitoring; additional monitoring if necessary based on initial results ▪ Verify method with laboratory prior to ordering media and equipment Real Time Monitoring Equipment: ▪ 10.2 or 10.6 eV PID

Chemical or Class (Synonyms or Isomers)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits Special Characteristics	Routes of Exposure Warning Properties	Exposure Symptoms	Target Organs First Aid	Recommended PPE Respiratory Protection	Recommended Monitoring
GRPH (motor fuel, motor spirits, gasoline, TPH)	DOSH PEL: 300 ppm TWA 500 ppm STEL	ACGIH TLV: 300 ppm TWA 500 ppm STEL FP: -45°F LEL: 1.4% Carcinogen	Inhalation, ingestion, skin absorption, skin or eye contact Characteristic odor Rainbow sheen	Irritation of eyes, skin, and mucous membranes; inflammation of skin and lungs; headache; weakness; exhaustion; blurred vision; dizziness, slurred speech; confusion; convulsions; possible liver and kidney damage; (potential occupational carcinogen)	Eyes, skin, respiratory system, central nervous system, liver, kidneys Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately	▪ Impermeable, chemical-resistant, disposable clothing ▪ Nitrile gloves If PEL is exceeded: min full-face SA respirator in PP/PD mode	If potential for exposure exists: ▪ Initiate personal air monitoring; additional monitoring if necessary based on initial results ▪ Verify method with laboratory prior to ordering media and equipment Real Time Monitoring Equipment: ▪ Detector Tubes ▪ 10.2 or 10.6 eV PID
Lead, Inorganic	DOSH PEL: 0.05 mg/m^3 TWA DOSH AL: 0.03 mg/m^3 TWA	NIOSH REL: 0.05 mg/m^3 TWA IDLH: 100 mg/m^3 None	Inhalation, ingestion, skin and eye contact Odorless dust – poor warning properties	Eye irritation, weakness, exhaustion, insomnia, facial paleness; weight loss, constipation, abdominal pain, colic, anemia, gingival lead line; tremor; paralysis of wrist and ankles, brain damage, kidney disease; hypotension (Carcinogen)	Eyes, gastro-intestinal tract, central nervous system, kidneys, blood, gingival tissue Eye: Irrigate immediately Skin: Soap wash promptly Inhalation: Respiratory support Ingestion: Medical attention immediately	▪ Impermeable, disposable clothing ▪ Nitrile or Neoprene gloves Min ½ Mask AP/HEPA; Higher APF if personal air monitoring	If potential for exposure exists: ▪ Initiate personal air monitoring; additional monitoring if necessary based on initial results ▪ Verify method with laboratory prior to ordering media and equipment

Chemical or Class (Synonyms or Isomers)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits Special Characteristics	Routes of Exposure Warning Properties	Exposure Symptoms	Target Organs First Aid	Recommended PPE Respiratory Protection	Recommended Monitoring
Lead, Organic (as Tetraethyl Lead)	DOSH PEL: 0.075 mg/m^3 TWA (Skin) 0.225 mg/m^3 STEL	NIOSH REL: 0.075 mg/m^3 TWA (Skin) IDLH: 40 mg/m^3 FP: 200°F LEL: 1.8% None	Inhalation, ingestion, skin absorption, skin and eye contact Musty odor	Eye irritation, insomnia, weakness, exhaustion, anxiety, tremor, hyperactive reflexes, spasticity, slow heart rate, hypotension, hypothermia, paleness of skin, nausea, anorexia, weight loss, confusion, hallucinations/ delusions, mania, convulsions, coma	Central nervous system, cardiovascular system, kidneys, eyes Eye: Irrigate immediately Skin: Soap wash promptly Inhalation: Respiratory support Ingestion: Medical attention immediately	▪ Impermeable, chemical-resistant, disposable clothing ▪ Silver Shield/composite gloves If PEL is exceeded: any SA respirator operated in a continuous-flow mode	If potential for exposure exists: ▪ Initiate personal air monitoring; additional monitoring if necessary based on initial results ▪ Verify method with laboratory prior to ordering media and equipment
Mercury- colloidal, Aryl, or inorganic	DOSH PEL (Vapor): 0.05 mg/m^3 TWA 0.15 mg/m^3 STEL DOSH PEL (Aryl or inorganic): 0.1 mg/m^3 TWA 0.3 mg/m^3 STEL OSHA PEL: 0.1 mg/m^3 TWA 0.1 mg/m^3 C (Vapor)	NIOSH REL: 0.05 mg/m^3 TWA (Vapor - Skin) 0.1 mg/m^3 C (Other – Skin) IDLH: 10 mg/m^3 Carcinogen	Inhalation, ingestion, skin absorption, skin and eye contact Elemental mercury is odorless, colloidal, heavy, silver-white material	Irritation of eyes and skin, cough, chest pain, breathing difficulty, bronchitis, pneumonitis, tremor, insomnia, irritability, indecision, headache, weakness, exhaustion, stomatitis, salivation, gastrointestinal disturbance, anorexia, weight loss, proteinuria (Carcinogen)	Eyes, skin, respiratory system, central nervous system, kidneys Eye: Irrigate immediately Skin: Soap wash promptly Inhalation: Respiratory support Ingestion: Medical attention immediately	▪ Impermeable, chemical-resistant disposable clothing ▪ Silver Shield/composite glove If PEL is exceeded: any SA respirator in continuous-flow	If potential for exposure exists: ▪ Initiate personal air monitoring; additional monitoring if necessary based on initial results ▪ Verify method with laboratory prior to ordering media and equipment Real Time Monitoring Equipment: ▪ Detector Tubes ▪ Portable mercury vapor monitor

Chemical or Class (Synonyms or Isomers)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits / Special Characteristics	Routes of Exposure / Warning Properties	Exposure Symptoms	Target Organs / First Aid	Recommended PPE / Respiratory Protection	Recommended Monitoring
Silica Dust, Crystalline (Commonly found in Portland cement, silica sand, and other materials)	DOSH PEL: 0.1 mg/m^3 TWA 0.3 mg/m^3 STEL (Respirable portion) OSHA PEL: 250 millions of particles per cubic foot of air	NIOSH REL: 0.05 mg/m^3 TWA ACGIH TLV: 0.025 mg/m^3 IDLH: 25/50 mg/m^3 (depending on type) Carcinogen	Inhalation, ingestion, skin and eye contact Odorless dust – poor warning properties	Cough, breathing difficulty, wheezing, decreased pulmonary function, progressive respiratory symptoms (silicosis), irritation eyes [potential occupational carcinogen]	Eyes, respiratory system Eye: Irrigate immediately Inhalation: Fresh air	▪ Impermeable, disposable clothing ▪ Nitrile or Neoprene gloves If PEL is exceeded: min ½ Mask AP/HEPA; Higher APF per results of air monitoring	If potential for exposure exists: ▪ Initiate personal air monitoring; additional monitoring if necessary based on initial results ▪ Verify method with laboratory prior to ordering media and equipment Real Time Monitoring Equipment: ▪ Particulate Monitoring ▪ Cyclone Pump
PCE (Tetrachloroethylene, tetrachloroethene, perchloroethylene)	DOSH PEL: 25 ppm TWA 38 ppm STEL Skin OSHA PEL: 100 ppm TWA 200 ppm C (5-minutes in 3-hour period) 300 ppm (5-min maximum peak)	ACGIH TLV: 25 ppm TWA 100 ppm STEL IDLH: 150 ppm Carcinogen	Inhalation, ingestion, skin absorption, skin or eye contact Mild, chloroform-like odor	Irritation of eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; (potential occupational carcinogen)	Eyes, skin, respiratory system, liver, kidneys, central nervous system Eye: Irrigate immediately Skin: Soap wash promptly Inhalation: Respiratory Support Ingestion: Medical attention immediately	▪ Impermeable, chemical resistant disposable clothing ▪ Nitrile or neoprene gloves If PEL is exceeded: any full-face SA respirator in PP/PD mode	If potential for exposure exists: ▪ Initiate personal air monitoring; additional monitoring if necessary based on initial results ▪ Verify method with laboratory prior to ordering media and equipment Real Time Monitoring Equipment: 10.2 or 10.6 eV PID

Chemical or Class (Synonyms or Isomers)	DOSH PEL/AL (OSHA PEL if different)	Other Pertinent Limits / Special Characteristics	Routes of Exposure / Warning Properties	Exposure Symptoms	Target Organs / First Aid	Recommended PPE / Respiratory Protection	Recommended Monitoring
TCE (Trichloroethylene, trichloroethene, ethylene trichloride)	DOSH PEL: 50 ppm TWA 200 ppm STEL OSHA PEL: 100 ppm TWA 200 ppm C 300 ppm peak (5 minutes)	IDLH: 1,000 ppm LEL: 8% None	Inhalation, skin absorption, ingestion, skin or eye contact Chloroform-like odor	Irritation of eyes and skin; headache; visual disturbance; weakness; exhaustion; dizziness; tremor; drowsiness; nausea; vomiting; tingling, pricking, and inflammation of skin; cardiac arrhythmias; liver injury (potential occupational carcinogen)	Eyes, skin, respiratory system, heart, liver, kidneys, central nervous system Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately	Impermeable, chemical resistant disposable clothing Nitrile gloves If PEL is exceeded: min full-face SA respirator in PP/PD mode	If potential for exposure exists: ▪ Initiate personal air monitoring; additional monitoring if necessary based on initial results ▪ Verify method with laboratory prior to ordering media and equipment Real Time Monitoring Equipment: ▪ 10.2 or 10.6 eV PID
Vinyl Chloride (Chloroethylene)	DOSH PEL: 1 ppm TWA 5 ppm STEL OSHA PEL: 0.5 ppm AL	LEL: 3.6% Carcinogen Attacks iron and steel in the presence of moisture Polymerizes in air and sunlight Flammable gas at standard temperature and pressure	Inhalation, ingestion, skin or eye contact Pleasant odor at high concentrations	Lassitude (weakness, exhaustion); abdominal pain, gastrointestinal bleeding; enlarged liver; pallor or cyanosis of extremities; liquid: frostbite; [potential occupational carcinogen]	Liver, central nervous system, blood, respiratory system, lymphatic system Eyes and skin: If frostbite has occurred, seek medical attention immediately; if tissue is not frozen, immediately flush with water for a minimum of 15 minutes. Breathing: Respiratory support	▪ Impermeable, chemical resistant disposable clothing Silver Shield/composite gloves If PEL is exceeded: any SA respirator in PP/PD mode	If potential for exposure exists: ▪ Initiate personal air monitoring; additional monitoring if necessary based on initial results ▪ Verify method with laboratory prior to ordering media and equipment Real Time Monitoring Equipment: ▪ 10.2 or 10.6 eV PID

NOTES:
The NIOSH Pocket Guide provides more information for the chemical in question or for a chemical not listed.

ACGIH = American Conference of Governmental Industrial Hygienists
AL = action limit
AP = air purifying respirator
APF = assigned protection factor
C = ceiling exposure limit
cm^3 = cubic centimeter(s)
DOSH = Washington State Department of Labor and Industries, Division of Occupational Safety and Health
DRPH = diesel-range petroleum hydrocarbons
eV = electron volt
°F = degrees Fahrenheit
FP = flash point
GRPH = gasoline-range petroleum hydrocarbons
HEPA = high efficiency particulate air cartridge
IDLH = immediately dangerous to life and health
LEL = lower explosive limit
mg/m^3 = milligrams per cubic meter
min = minimum
NIOSH = National Institute of Safety and Health
OSHA = Occupational Safety and Health Administration
OV = organic vapor cartridge
PAPR = powered air purifying respirator
PEL = permissible exposure limit
PID = photoionization detector
PP/PD = positive pressure/pressure demand mode
PPE = personal protective equipment
ppm = parts per million
REL = recommended exposure limit
SA = supplied air respirator
STEL = short-term exposure limit, 15 minutes, unless otherwise noted
TLV = threshold limit value
TPH = total petroleum hydrocarbon
TWA = time-weighted average

4.2 SITE HAZARD ANALYSIS—PHYSICAL

This section addresses known and potential physical hazards specific to the site. Reference 04, Physical Hazards Analysis, provides more information regarding the process for identifying physical hazards.

4.2.1 Site-Specific Physical Hazards

The following physical hazards may be encountered while working on the site:

- Dust
- Excavation collapse
- Heavy equipment/moving machinery
- Noise Exposure
- Overhead utilities and features
- Slips, trips, and falls
- Traffic and moving equipment
- Underground utilities and features
- Unsecured/uncontrolled site

4.2.2 Utility Hazards

Described below are utility hazards that may be present at the site. In order to locate utilities, the Utility Notification Center should be called at 800-424-5555, a private locate should be scheduled (as appropriate), side sewer cards should be reviewed, owner/tenant documents should be reviewed, and the site should be visually inspected. References 10, Electrical Safety; 16, Overhead Hazards; and 19, Underground Services Location and Protection, provide additional information.

4.2.2.1 Underground Utilities

The following utilities and subsurface features have been identified beneath the site:

- Potable water, sanitary sewer, and natural gas service are provided to the Property by underground conduits.
- A waste oil UST and associated piping exist beneath the central-western portion of the Property.

4.2.2.2 Overhead Utilities

The following overhead utilities have been identified around the site:

- Telephone lines were observed along the western Property boundary.
- An overhead electrical line connecting from the power pole near the western edge of the Property.

5.0 TASK-RELATED SITE HAZARD ANALYSIS

This section outlines the health and safety hazards that may be present on the site as a result of the tasks to be performed by SoundEarth or subcontractors as they relate to the chemical and physical hazards identified in Sections 4.1 and 4.2, above. References noted in Table 2: Site-Specific Task-Related Hazards, should be reviewed for the controls and any personal protective equipment required. References 01, Project Safety Responsibilities, through 25, Demolition, as cited in Table 2, provide detailed information and instructions for protecting SoundEarth employees from chemical and physical hazards applicable to this Site-Specific HASP. A summary of the controls specific to the site is presented in Section 0, Task-Related Site Hazard Controls Summary.

TABLE 2: SITE-SPECIFIC TASK-RELATED HAZARDS

Tasks	Role	Hazard	References
Sampling – Environmental	Task performed by SoundEarth	Chemicals	Table 1, Chemical Hazards 06, Chemical Hazard Controls 17, Sample Collection
		Confined spaces	09, Confined Space Awareness
		Dust	06, Chemical Hazard Controls 07, General Site Safety Requirements 17, Sample Collection
		Emergencies	02, Emergency Response Plan
		Ergonomics	11, Ergonomics
		General site hazards	07, General Site Safety Requirements
		Ladders or heights	22, Work at Heights
		Processes	21, Work Around Hazardous Processes
		Spills	06, Chemical Hazard Controls 24, Safe Handling of Flammable Liquids
		Temperature extremes	13, Temperature Extremes
		Traffic/mobile equipment	18, Traffic and Moving Equipment Hazards

Tasks	Role	Hazard	References
Sampling – Environmental (continued)	Task performed by SoundEarth	Unstable ground	20, Unstable Ground
		Visibility	07, General Site Safety Requirements 18, Traffic and Moving Equipment Hazards
		Working near water	23, Work Near Water
UST Decommissioning	Subcontractor Observation	Chemicals	Table 1, Chemical Hazards 06, Chemical Hazard Controls 17, Sample Collection
		Confined spaces	09, Confined Space Awareness
		Cutting/welding	10, Electrical Safety 14, Hot Work Awareness 25, Demolition
		Demolition	25, Demolition
		Emergencies	02, Emergency Response Plan
		Ergonomics	11, Ergonomics
		General site hazards	07, General Site Safety Requirements
		Noise	15, Noise and Hearing Protection
		Overhead utilities and features	10, Electrical Safety 16, Overhead Hazards
		Potentially flammable or explosive environment	06, Chemical Hazard Controls 24, Safe Handling of Flammable Liquids
		Powered tools and equipment	10, Electrical Safety;
		Unsecure/uncontrolled site	08, Site Security and Overall Site Control
		Temperature extremes	13, Temperature Extremes
		Traffic/mobile equipment	18, Traffic and Moving Equipment Hazards

Tasks	Role	Hazard	References
UST Decommissioning *(continued)*	Subcontractor Observation	Underground utilities and features	10, Electrical Safety 19, Underground Services Location and Protection
		Unstable ground	20, Unstable Ground
		Visibility	07, General Site Safety Requirements 18, Traffic and Moving Equipment Hazards
Excavation and Trenching	Subcontractor Observation	Chemicals	Table 1, Chemical Hazards 06, Chemical Hazard Controls 17, Sample Collection
		Confined spaces	09, Confined Space Awareness
		Cutting/welding	10, Electrical Safety 14, Hot Work Awareness
		Demolition	25, Demolition
		Dust	06, Chemical Hazard Controls 07, General Site Safety Requirements 17, Sample Collection
		Emergencies	02, Emergency Response Plan
		Ergonomics	11, Ergonomics
		General site hazards	07, General Site Safety Requirements
		Noise	15, Noise and Hearing Protection
		Overhead utilities and features	10, Electrical Safety 16, Overhead Hazards
		Powered tools and equipment	10, Electrical Safety
		Temperature extremes	13, Temperature Extremes
		Traffic/mobile equipment	18, Traffic and Moving Equipment Hazards

Tasks	Role	Hazard	References
Excavation and Trenching *(continued)*	Subcontractor Observation	Unsecure/uncontrolled site	08, Site Security and Overall Site Control
		Underground utilities and features	10, Electrical Safety; 19, Underground Services Location and Protection
		Unstable ground	20, Unstable Ground
		Visibility	07, General Site Safety Requirements 18, Traffic and Moving Equipment Hazards
		Temperature extremes	13, Temperature Extremes
Demolition	Subcontractor Observation	Chemicals	Table 1, Chemical Hazards; 06, Chemical Hazard Controls 17, Sample Collection
		Dust	06, Chemical Hazard Controls 07, General Site Safety Requirements 17, Sample Collection
		Emergencies	02, Emergency Response Plan
		Energized machinery	10, Electrical Safety 12, Energy Control (Lockout/Tagout) Awareness
		Ergonomics	11, Ergonomics
		General site hazards	07, General Site Safety Requirements
		Hot Work	07, General Site Safety Requirements 14, Hot Work Awareness
		Noise	15, Noise and Hearing Protection

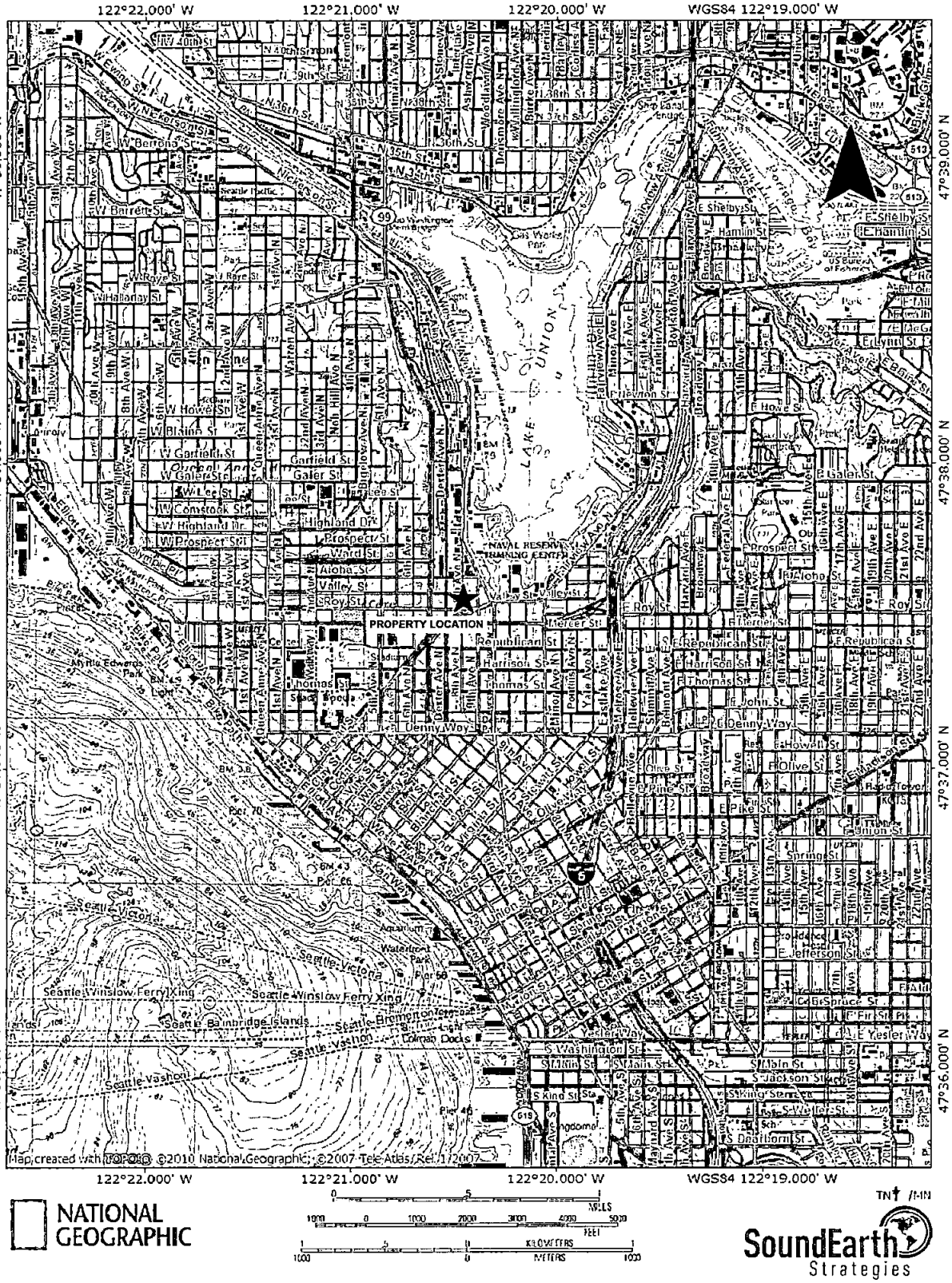
Tasks	Role	Hazard	References
Demolition *(continued)*	Subcontractor Observation	Overhead utilities and features	10, Electrical Safety 16, Overhead Hazards
		Potentially flammable or explosive environment	06, Chemical Hazard Controls 24, Safe Handling of Flammable Liquids
		Pressurized Air	25, Demolition
		Pressurized Liquid	25, Demolition
		Underground utilities and features	10, Electrical Safety 19, Underground Services Location and Protection
		Unsecure/uncontrolled site	08, Site Security and Overall Site Control
		Unstable ground	20, Unstable Ground
		Temperature extremes	13, Temperature Extremes
		Traffic/mobile equipment	18, Traffic and Moving Equipment Hazards
		Unstable ground	20, Unstable Ground
		Visibility	07, General Site Safety Requirements 18, Traffic and Moving Equipment Hazards

6.0 TASK-RELATED SITE HAZARD CONTROLS

The following additional hazard controls, based on the tasks identified in the Field Activities above, are required for employees of SoundEarth while performing work on the site:

- Work clothing or coveralls.
- Level D personal protective equipment, which includes gloves (task-specific), steel-toed boots, safety glasses, and a reflective safety vest.
- Traffic control, lighting, hard hats, and hearing protection when appropriate.

FIGURES



SoundEarth Strategies

WWW.SOUNDEARTHINC.COM

BUCA DI BEPPO/ DUCATI PROPERTY
1154-001-01
701 9TH AVENUE NORTH
SEATTLE, WASHINGTON

FIGURE G-1
PROPERTY LOCATION MAP

8/5/2015

P:\1154 BUCA DI BEPPO\1154-001 BUCA DI BEPPO\TECHNICAL\CAD\2015\HASP\0996-007_2014SSI_FIG01_VIC_F.DWG

8/5/2015

ALLEY WAY

SUSPECT WASTE OIL UST
(HART CROWSER, 1988)
ENVIROS, 1992)

HEATING FUEL FILL
AND VENT PIPES

OIL/WATER
SEPARATOR

N

0 10 20

APPROXIMATE SCALE IN FEET

FORMER
BOILER ROOM
(BASEMENT)

MW1

ROY STREET

SIDEWALK

ABANDONED 8" SEWER LINE

WALL

GARAGE

FORMER PIT

SUSPECT UST
FILL PORT

FORMER
CATCH BASIN

FORMER
MACHINE SHOP

SIDEWALK

NINTH AVENUE NORTH

B-6

LEGEND

MW01	MONITORING WELL (ENVIROS, 1992)
MW-1	MONITORING WELL (HART CROWSER, 1988)
	PROPERTY BOUNDARY
	PARCEL BOUNDARY
SS	SEWER LINE
SW	STORMWATER LINE
	CONSTRUCTION EXCAVATION EXTENT
	PROPOSED REMEDIAL EXCAVATION AREAS
UST	UNDERGROUND STORAGE TANK
	FORMER HYDRAULIC LIFTS
	ESTIMATED AREA OF SOILS REQUIRING SUBTITLE D LANDFILL (CATEGORY 3, 4) DISPOSAL
	ESTIMATED AREA OF SOIL REQUIRING CATEGORY 2 SOIL DISPOSAL

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BUCA DI BEPPO/DUCATI
701 9TH AVENUE NORTH
SEATTLE, WASHINGTON
SOUNDEARTH PROJECT #1154-001

FIGURE G-2
SITE AND EXPLANATION PLAN

P:\1154 BUCA DI BEPPO\1154-001 BUCA DI BEPPO\TECHNICAL\CAD\2015\HASP\1154-001 FIG6.DWG

ATTACHMENT A
ACKNOWLEDGMENT AND AGREEMENT FORM

SoundEarth Strategies

ACKNOWLEDGMENT AND AGREEMENT FORM

Project Name/Facility Name: _____

Project Number/Facility Number: _____

I acknowledge that I have reviewed a copy of the Health and Safety Plan for this project, that I understand it, and that I agree to comply with all of its provisions. I also understand that I could be prohibited by the Site Manager/Health and Safety Officer or other SoundEarth personnel from working on this project if I fail to comply with any aspect of this Health and Safety Plan:

Name	*Signature*	*Company*	*Date*

ATTACHMENT B
DAILY HEALTH AND SAFETY BRIEFING LOG

SoundEarth Strategies

DAILY HEALTH AND SAFETY BRIEFING LOG

Date: _____ **Start Time:** _____

Site Discussed: _____

Subjects Discussed: _____

_____

_____

_____

_____

_____

_____

_____

ATTENDEES

Print Name	Signature

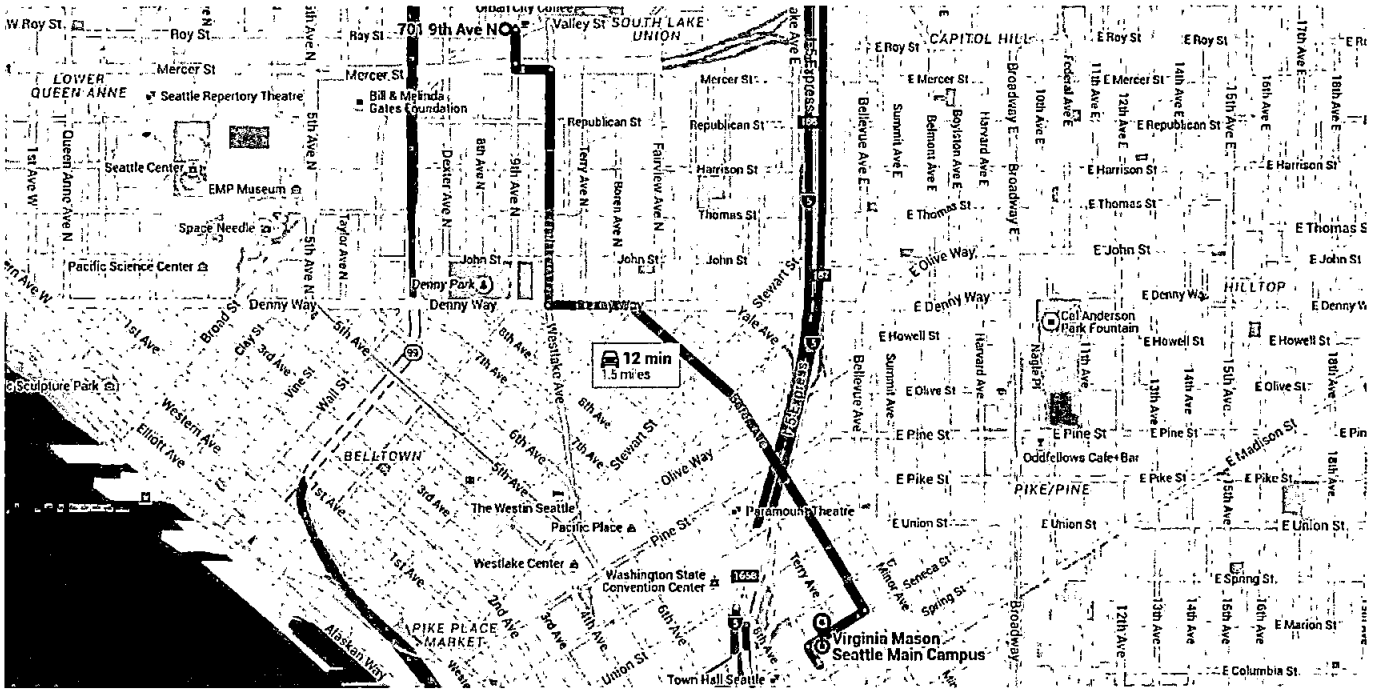
Meeting Conducted by _____ **Date Signed** _____

ATTACHMENT C
HOSPITAL ROUTE

Google

Drive 1.5 miles, 12 min

Directions from **701 9th Ave N** to **Virginia Mason Seattle Main Campus**



701 9th Ave N

Seattle, WA 98109

1. Head **south** on **9th Ave N** toward **Broad St**

322 ft

2. Use the left 2 lanes to turn **left** at the 2nd cross street onto **Mercer St**

377 ft

3. Turn **right** at the 1st cross street onto **Westlake Ave N**

0.4 mi

4. Turn **left** onto **Denny Way**

0.1 mi

5. Turn **right** onto **Boren Ave**

0.7 mi

6. Turn **right** onto **Seneca St**

0.1 mi

7. Turn **left** onto **9th Ave**

Destination will be on the left

194 ft

Virginia Mason Seattle Main Campus

1100 9th Avenue, Seattle, WA 98101

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.