PUBLIC REVIEW DRAFT
INTERIM ACTION WORK PLAN
Former Chevron Service Station No. 90129

4700 Brooklyn Avenue NE, Seattle, WA

Prepared for:
FH Brooklyn LLC & Chevron Environmental Management Company

Project No. 160092 • October 16, 2017 Public Review Draft

Aspect CONSULTING

earth + water

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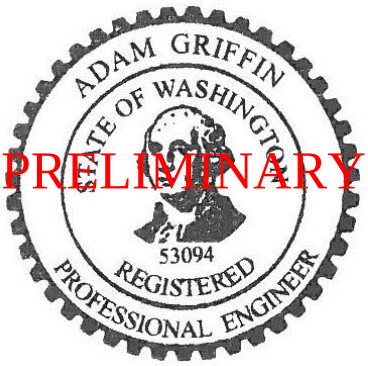

PRELIMINARY

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1 Introduction

Aspect Consulting, LLC (Aspect) presents this Public Review Draft Interim Action Work Plan (Work Plan) for the former Chevron Service Station No. 90129 located at 4700 Brooklyn Avenue NE in Seattle, Washington (Site; Figure 1). The purpose of the interim action is to remove soils and ground water impacted by petroleum hydrocarbons allowing for redevelopment of the property. These activities have been designed and will be conducted in full accordance with the Model Toxics Control Act (MTCA) implementing regulation found in Washington Administrative Code (WAC) 173-340 which "establishes administrative processes and standards to identify, investigate, and clean up facilities where hazardous substances have come to be located."

FH Brooklyn, LLC (FH Brooklyn) and Chevron Environmental Management Company (CEMC) are signatories to an Agreed Order (No. DE 13815, effective January 11, 2017) with the Washington State Department of Ecology (Ecology). The Agreed Order requires FH Brooklyn and CEMC to complete a remedial investigation (RI) and Feasibility Study (FS), and to complete a draft cleanup action plan (DCAP) for the Site. Under WAC-173-340-430, Ecology also permits implementation of interim actions when warranted. The Agreed Order requires FH Brooklyn and CEMC to complete a contaminated soil removal interim action.

Per the Agreed Order, the interim action is subject to:

- A draft work plan that outlines the proposed scope of work and schedule;
- Public review and comment; and
- Ecology approval of the final work plan.

This Work Plan, prepared for public review and comment, and Ecology approval meets that requirement of the Agreed Order. For the purpose of this Work Plan, the Property refers to the 4700 Brooklyn Avenue NE tax parcel and the Site is defined as wherever contamination has come to be located from releases on the Property.

The first RI activities under the Agreed Order were completed in November 2016 by Aspect and documented in the On-Property Remedial Investigation Data Report dated January 17, 2017 (Aspect, 2017a). These RI activities were completed in accordance with the Ecology-approved Preliminary Draft Remedial Investigation Work Plan (Aspect, 2016) and consisted of investigations on the Property necessary to design the interim action, specifically to establish the extent of petroleum-contaminated soil that exceeds MTCA Method A cleanup levels (CULs). The results are a design basis in this Work Plan and will also be incorporated into the Agreed Order-deliverable Remedial Investigation Report.

A Final Remedial Investigation Work Plan (RIWP) was submitted on May 26, 2017, by Leidos on behalf of CEMC and in accordance with the requirements of the Agreed Order (Leidos, 2017). Ecology approved the Final RIWP on July 24, 2017. The objectives of

this investigation are to address data gaps regarding the nature and extent of petroleum contamination in soil, ground water, and soil vapor at the Site, and to comply with the requirements of Agreed Order No. DE 13815. The investigations proposed in the Final RIWP are off-Property and the results will be used to determine the full extent of the Site, as defined by WAC 173-340-200, and reported in the RI Report.

1.1 Work Plan Organization

This Work Plan is organized as follows:

- Section 2—Site Description and Subsurface Conditions
- Section 3—Interim Action Summary
- Section 4—Interim Action Elements
- Section 5—Compliance Monitoring
- Section 6—Permits and Approvals
- Section 7—Reporting
- Section 8—Schedule
- Section 9—References
- Section 10—Limitations

2 Site Description and Subsurface Conditions

2.1 Site Location and Description

The Site is located at 4700 Brooklyn Ave NE in the University District neighborhood in Seattle, Washington, and consists of King County Tax Parcel No. 8816400985 totaling approximately 0.38 acre (Figure 2). The Property and surrounding neighborhood is zoned for commercial/mixed use (Seattle Mixed U-District [SM-U 75-240]). Site topography is relatively flat, with ground surface ranging in elevation of approximately 214 to 217 feet above mean sea level (NAVD 88 vertical datum).

The Property is currently vacant. The former convenience store and fuel canopy remain at the Property pending demolition during the interim action. Gasoline service station operations began at the Property in the 1910s and ceased in November 2016. The most recent service station configuration (convenience store, pump islands, and fuel underground storage tanks [USTs]) is shown on Figure 2.

2.2 Site Geology and Hydrology

Fill is present in areas at the Property to a maximum depth of 15 feet below ground surface (bgs). Fill is primarily associated with station rebuilds and backfill of former UST removals. Native soils at the Property consist of fine to medium sand with silt and occasional gravel, grading from loose to dense from approximately 15 to between 25 to

30 feet bgs, where fill exists. The native soil (fine to medium sand) occurs at ground surface where no fill exists, generally outside the footprint of former USTs. Underlying the fine to medium sand unit, is hard gray silt that occurs at depths of 25 to 33 feet bgs and is greater than 2 feet thick at all boring locations. A north-south and east-west cross section are presented in Figures 3 and 4, respectively, showing the Site geology, UST features and ground water elevations. The boring and monitoring well logs from Site investigations (including the November 2016 on-Property RI activities) are provided in Appendix A.

The depth to ground water observed at monitoring wells on the property varies seasonally and typically ranges in depth from 15 to 18 feet bgs or approximately 198 to 202 feet above mean sea level. Abnormally shallow ground water of 11 feet bgs was observed from July 2009 to June 2010 at multiple wells. The highest ground water elevations are observed in November to May during periods of high precipitation. Also, depths to ground water of 21 to 26 feet bgs have infrequently been observed at the end of summer and early fall; the driest part of the year. Variability in ground water levels corresponds to high and low precipitation periods, and the backfill in the former and current UST pits.

Historical ground water depth to water measurements were reported using an arbitrary Site datum (SAIC, 2013); the existing Site monitoring wells were surveyed (vertical datum NAVD 88) in November 2016 and ground water elevations reported in the On-Property Remedial Investigation Data Report (Aspect, 2017a).

Ground water flow is predominantly to the southeast, with a more easterly direction of flow in the southern portion and southerly in the northern portion (Aspect, 2016). A southeasterly direction of ground water flow is consistent with data from another gasoline release site (the existing 76 Station at 4557 Brooklyn Ave NE) located southwest of the Site. Horizontal hydraulic gradients at the Site range from 0.01 and 0.02 feet per foot (ft/ft).

2.3 Summary of Previous Cleanup Actions

2.3.1 UST Replacement and Soil Cleanup Action (1990)

Approximately 900 cubic yards of soil impacted with total petroleum hydrocarbons (TPH) were excavated and disposed of at a permitted landfill in the course of a service station renovation project in early 1990. The excavation area is shown on Figure 2. Three old USTs were removed from the northern portion of the excavation. In the course of digging the pit for three new 12,000-gallon USTs, a 1,000-gallon fuel UST was encountered in the southeast corner of the pit. That UST, which had been previously filled with pea gravel, was left in place when the new USTs were installed. Its approximate location is shown on Figure 2 along with that of the replacement USTs.

2.3.2 LNAPL Bailing

Fourteen ground water monitoring wells (MW-01 through MW-14) were installed at the site in January 1990, and light non-aqueous phase liquid (LNAPL) was observed floating on the ground water in wells MW-04 and MW-12. LNAPL was intermittently removed from these two wells using a bailer. Approximately 32 gallons of LNAPL was reportedly removed through August 1990.

An LNAPL sample collected from MW-04 in early 1990 was submitted for laboratory analysis. It was quantified as weathered gasoline, with an API gravity of 52.5 (specific gravity of 0.769 at 60 degrees C).

2.3.3 Soil Vapor Extraction

A soil vapor extraction (SVE) system began operating on the Property in May 1990. SVE wells included 10 of the 14 monitoring wells installed in January 1990 (all except MW-2, MW-5, MW-8, and MW-10) plus recovery well (R-01), installed in April 1990. Wells MW-4 and MW-12 also included air sparging via a ¾-inch-diameter pipe installed inside the well casing to promote volatilization of LNAPL. Extracted soil vapors were treated in a thermal oxidizer.

Between May 1990 and June 1995, the SVE system removed an estimated 2,900 gallons of LNAPL. It is not known when the SVE system was shut down.

2.3.4 UST Decommissioning (2017)

The three USTs were decommissioned and permanently closed in February 2017 in accordance with Ecology UST regulations (WAC 173-360). Documentation of UST decommissioning (including UST Site Assessment Report and Checklist) activities was provided to Ecology's UST Section in a technical memorandum dated March 3, 2017 (Aspect, 2017b).

Existing Site monitoring wells within the footprint of UST infrastructure were abandoned on February 3, 2017, prior to UST Decommissioning and in accordance with Ecology regulations (WAC 173-160-140). Monitoring wells MW- 1, MW-2, MW-4, MW-5, MW-8, MW-9 and recovery well (R-01) were abandoned (Figure 2).

2.4 LNAPL Occurrence

In addition to MW-04 and MW-12, LNAPL has been observed on at least one occasion in wells MW-03, MW-09, MW-10, MW-11, MW-13, and R-01 (refer to Figure 7). During the November 2016 event, LNAPL thicknesses of 0.98 foot and 0.11 foot were measured in wells MW-10 and MW-13, respectively, and LNAPL sheens (less than 0.01-foot thickness) were observed in wells MW-09, MW-11, and MW-12 (Figure 7).

2.5 Soil Investigations and Proposed Cleanup Levels

Between January/February 1990 and November 2016, borings were advanced on five occasions to investigate the lateral and vertical extent of petroleum-contaminated soil located on the Property. Soil samples collected from the borings were analyzed for the following petroleum hydrocarbon constituents:

- Total petroleum hydrocarbon (TPH) fractions: gasoline range organics (GRO); diesel range organics (DRO); and oil range organics (ORO); and
- The gasoline constituents: benzene, toluene, ethylbenzene, and total xylenes (BTEX).

Soil sampling results for the above analytes are summarized in Table 1. Selected soil samples were also analyzed for the following:

- Other volatile organic compounds (VOCs);
- Polychlorinated biphenyls (PCBs);
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs); and
- The metals cadmium, chromium, lead, nickel, and zinc.

Soil sampling results for these analytes are summarized in Table 2.

Tables 1 and 2 include the proposed soil cleanup levels for the Property and this interim action. Results that exceed those levels are highlighted in Tables 1 and 2. For all analytes that have Method A soil cleanup levels (for unrestricted land use) established under MTCA, those are the cleanup levels proposed for the interim action for the Property. MTCA Method B soil cleanup levels are proposed for analytes that do not have Method A cleanup levels; refer to the table footnotes.

As shown in Table 1, none of the soil samples have detections of DRO or ORO exceeding the corresponding cleanup levels. Only two samples, MW-3-18 and MW-4-15.5, have exceedances for toluene, ethylbenzene, and total xylenes. However, the magnitude of those exceedances are small compared to the magnitudes of the GRO and benzene exceedances. Therefore, GRO and benzene are used for determining interim action excavation extent (which includes MW-3-18 and MW-4-15.5 sample locations with exceedances of toluene, ethylbenzene, and total xylenes). GRO and benzene concentrations detected in soil samples are depicted on Figure 6.

There are only two soil samples with concentrations exceeding cleanup levels for the analytes listed in Table 2:

- The naphthalene concentration detected in AB-6-17 (6.4 mg/kg) is 1.3 times the corresponding cleanup level; and
- The estimated total cPAH TEQ concentration detected in AB-7-6 (0.15 mg/kg) is 1.5 times the corresponding cleanup level.

Sample AB-6-17 has a much higher cleanup level exceedance for GRO (i.e., more than 30 times the GRO cleanup level).

2.6 Ground water Quality and Proposed Cleanup Levels

Wells MW-01 through MW-14 were installed in early 1990, and wells MW-15 and MW-16 in early 2001 (monitoring well logs are provided in Appendix A.) These wells were sampled periodically from the time they were installed up until 2014. Ground water samples were submitted for laboratory analysis of GRO, DRO, ORO, and BTEX. Starting in 2001, selected samples were also analyzed for the gasoline additive methyl tertiary-butyl ether (MTBE). If free product was present in the well at the time of monitoring, a ground water sample was typically not collected.

Ground water monitoring wells were sampled on November 21 and 22, 2016, for a broader range of constituents as described in the Preliminary Draft RIWP (Aspect, 2016). Ground water sampling results are summarized in Table 3 and on Figure 7. Figure 7 lists results for GRO, DRO, and benzene, since those are the analytes that exceeded proposed ground water cleanup levels by the widest margins. Well MW-1 was not sampled due to an obstruction in the well. Well MW-8 was dry. Well MW-10 was not sampled due to the presence of measurable LNAPL. A sample was collected from below the LNAPL layer at MW-13 for VOC analysis to provide chlorinated VOC results.

The proposed ground water cleanup levels for the Property for this interim action are listed in Table 3 (and on Figure 7 for GRO, DRO, and benzene). Results that exceed those levels are highlighted.

3 Interim Action Summary

The petroleum-contaminated soil removal interim action will allow for property redevelopment. Shoring will be installed to enable removal of contaminated soils above the proposed cleanup levels within the Property. For the purposes of this Work Plan, the average total excavation depth is assumed to be 24 feet bgs. The excavation may extend deeper at select locations where exceedances of proposed soil cleanup levels were identified, and where performance monitoring indicates exceedances. Excavated soils will be tested and, based on test results, will be screened for transport and disposal off-Property. Areas that are excavated below the final development depth will be backfilled with excavated soil suitable for reuse or clean, imported fill, and compacted for development requirements.

3.1 Deep Soil Cleanup Level Exceedances

The nine explorations advanced during the November 2016 site investigation (AB-01 through AB-09) are the only Site explorations for which soil samples at or below 24-foot depth were submitted for laboratory analysis. As shown on Figure 6, soil cleanup level exceedances were detected at or below 24-foot depth in 4 explorations:

- AB-02 – Benzene exceedance at 24-foot depth;
- AB-06 – Benzene exceedance at 24-foot depth;
- AB-07 – Benzene exceedance at 33-foot depth; and
- AB-09 – Benzene exceedance at 27-foot depth.

While AB-06 and AB-07 were drilled in an area of known historical release and LNAPL presence, AB-02 and AB-09 are situated along the eastern property boundary. Benzene was not detected in any of the soil samples collected above 24-foot depth in AB-02 and AB-09.

3.2 Estimated Volume of Soil to be Removed

Targeted soil excavation below the assumed 24-foot depth will be necessary to achieve the interim action goal of removing all soil cleanup level exceedances on the Property. This targeted excavation will occur at boring locations AB-07 and AB-09 to depths of at least 33 and 27 ft bgs, respectively (Figure 6).

Based on the above evaluation, exceedances of proposed soil cleanup levels extend down to the top of the silt layer in some areas. Figure 5 shows depths to the silt layer at all explorations that encountered that layer, based on soil classification during drilling. Those depths range from 25 feet at MW-16 to 33 feet at AB-01. Assuming an average total excavation depth of 24 feet, an estimated 26,000 tons of soil will be excavated during the interim action. Based on the available soil characterization data, an estimated 6,300 tons of this soil will be categorized as contaminated and an estimated 14,800 tons will be clean. The balance of soil will be Category 2 or "impacted," an estimated 4,900 tons. These estimated soil quantities are used for planning purposes; actual soil quantities will be determined during construction based on methods described in Section 4.4.2.

The known clean and contaminated soil, based on Site characterization results (Figure 6), will be direct-loaded (to the extent possible) and transported to the appropriate, permitted disposal facility. All other soils will be managed as described in Section 4.4 and in accordance with Ecology's Guidance for Remediation of Petroleum Contaminated Sites. Additional construction detail will be included in the Construction Management Plan (CMP) under separate cover.

4 Interim Action Elements

This section describes specific work elements of the interim action.

4.1 Construction and Safety Requirements

A traffic control plan will be implemented to minimize transportation impacts during the interim action. The traffic control plan will be prepared by the construction contractor and submitted to the City of Seattle for review and approval.

The following is a summary of construction and safety requirements to be employed at the Site when contamination is encountered during redevelopment construction:

- All persons performing Site activities where they may contact hazardous materials, including petroleum hydrocarbon-impacted soil or ground water, must have completed Hazardous Waste Operations and Emergency Response (HAZWOPER) training in accordance with the Occupational Safety and Health Administration Part 1910.120 of Title 29 of the Code of Federal Regulations, and be in possession of a current HAZWOPER certification card.
- All work must be performed in accordance with the contractor's site-specific health and safety plan (HASP). The HASP includes guidelines to reduce the

potential for injury, 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 generated waste. The general contractor will operate under its own HASP, as will any subcontractor performing site activities where hazardous materials may be contacted.

- A safety meeting will be conducted prior to the start of each workday to inform workers of changing work conditions, and to reinforce key safety requirements.

All work must be conducted in a manner consistent with federal, state, and local construction and health and safety standards applicable to the Site and to the work being performed. All companies are responsible for the health and safety of their own workers.

4.2 Monitoring Well Decommissioning

As discussed in Section 2.3.4, seven wells were abandoned in February 2017 prior to UST Decommissioning. Before excavation commences, the remaining on-Property monitoring wells will be decommissioned in accordance with WAC 173-160-460. Additional monitoring wells are to be installed outside the footprint of the soil excavation and off-Property as described in the Final RIWP (Leidos, 2017) and will be used to monitor dewatering progress as discussed in Section 4.5.

4.3 UST Removal

As noted in Section 2.1 and shown on the attached figures, the three fuel USTs in the southwest portion of the property were removed in February 2017. If any additional USTs are encountered during soil excavation activities, they will be removed in accordance with Ecology's UST regulations (WAC 173-360-200 and WAC 173-360-385).

4.4 Soil Monitoring and Management

4.4.1 Identification of Contaminated Soils

An Aspect field representative will be onsite full-time to monitor excavation activities for evidence of unanticipated contamination. Criteria to be used include, but are not limited to:

- Petroleum hydrocarbon staining, sheen, or chemical color hues in soil or standing water;
- The presence of separate-phase petroleum hydrocarbon product or other chemicals;
- The presence of utility pipelines with sludge or trapped liquid indicating petroleum hydrocarbon or chemical discharge sludge;
- The presence of buried pipes, conduits, or tanks;
- Vapors causing eye irritation or nose tingling or burning; and
- The presence of gasoline- or oil-like odors.

The remainder of Section 4.4 discusses monitoring and management protocols for soils contaminated with petroleum hydrocarbons, since those are the contaminants known to be present in Site soils. Soils impacted with petroleum hydrocarbons will be managed in accordance with Ecology's *Guidance for Remediation of Petroleum Contaminated Sites* (Ecology, 2016a). If other soil contaminants or other conditions are encountered, an appropriate environmental response will be developed on a case-by-case basis.

4.4.2 Field Screening, Segregation, and Stockpiling

Based on the results of the November 2016 investigation (Figure 6), the excavated soils will be handled as:

- Clean (Category 1) – Petroleum hydrocarbon contaminant concentrations are not detected and there is no odor, staining, or visible sheen. Generally, soils less than 13 feet bgs are expected to be clean based on the nondetect analytical results
- Impacted (Category 2) – Petroleum hydrocarbon contaminants are detected below MTCA Method A cleanup levels.
- Contaminated (Categories 3 & 4) – Petroleum hydrocarbon contaminants are detected above MTCA Method A cleanup levels. The soils between depths of 13 and 24 feet bgs are where the most contamination is observed as expected (smear zone associated with LNAPL and ground water table fluctuations).

When evidence of petroleum hydrocarbon-contaminated soil is encountered (and no analytical data available), an Aspect field representative will use visual and PID field screening techniques to assess the extent of contamination, and instruct the contractor in segregation of impacted and contaminated soils. The segregation of soils will follow Ecology guidance (Ecology, 2016a).

Excavated soils that are known to be contaminated based on analytical data presented herein (or field-determined) may be direct-loaded and hauled to the selected off-site treatment/disposal facility. It may be necessary to temporarily stockpile soils for final categorization and subsequent handling based on laboratory analytical results. All temporary stockpiles will be below grade (within the excavation), however any stockpiling will include the following requirements:

- All stockpiles will be lined with plastic sheeting of 10-mil minimum thickness, with adjacent sheeting sections overlapping a minimum of 3 feet.
- The perimeter of stockpiles will be surrounded by a berm to prevent run-on and/or runoff of precipitation.
- All stockpiles will be covered with plastic sheeting of 6-mil minimum thickness when not in use, and the cover will be anchored to prevent it from being disturbed by wind.

4.4.3 Soil Sampling and Analysis

In addition to field screening, Aspect will collect soil samples for laboratory analysis. Soil samples may be collected for the following reasons:

- To document contaminant concentrations in soils that are excavated;

- To determine disposal location of stockpiled soils
- To determine whether contaminant concentrations in soils that are left in place comply with cleanup levels. Performance monitoring is described in Section 5.2.

Soil sampling and analysis will be conducted in accordance with the project-specific Sampling and Analysis Plan/Quality Assurance Project Plan (SAP/QAPP), which is provided as Appendix C. Environmental data validation will be performed using Ecology's TCP Data Validation and Sampling Analysis Plan (SAP)/Quality Assurance Project Plan (QAAP) for data validation for all Formal Cleanup Sites (Ecology, 2016b). Data validation will be performed at Quality Assurance Level 2 (EPA2) with Third Party Data Validation.

Soil samples for laboratory analysis will be collected using U.S. Environmental Protection Agency (EPA) Method 5035 sampling kits. Discrete grab samples will be submitted for analysis so that contaminant variability can be evaluated. Field screening techniques will generally be used to help ensure that a "worst-case" sample is collected for analysis. If a backhoe is used to collect the sample (e.g., when it is unsafe for the sampler to enter the excavation), care will be taken to ensure the backhoe bucket is clean of other soil before sampling. "Fresh" soils will be exposed just prior to sampling (to limit contaminant loss to volatilization), and the soil sample will be collected from the middle of the bucket, from soils that have not contacted the sides of the bucket. If sampling personnel are able to safely access the sampling location, a hand auger or shovel will be used to expose "fresh" soils just prior to sampling.

All laboratory analyses will include the following:

- GRO by Northwest Method NWTPH-Gx;
- DRO and ORO by Northwest Method NWTPH-Dx; and
- BTEX by EPA Method 8021B.

Additionally, select samples will be analyzed for the following from soils in the vicinity of AB-6 and AB-7:

- Naphthalene by EPA Method 8260.
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) by

The overall scope of soil sampling and analysis activities will depend on field screening results, stockpile soil volumes, and treatment/disposal facility profiling requirements. The planned soil analytical is described below in Section 5.2 – Performance Monitoring.

4.4.4 Soil Profiling and Off-Site Treatment/Disposal/Reuse

All excavated soils with evidence of potential contamination will be characterized, primarily by laboratory analysis of representative samples, to determine off-site treatment/disposal/reuse options. Contaminated and Impacted soils will be disposed of at an appropriate, permitted disposal facility. Each landfill and treatment/disposal facility has its own waste acceptance criteria, and soil must be "profiled" to determine whether those criteria are met. The selected disposal facilities will be identified in the CMP. All

soil segregation, profiling and disposal will be conducted in accordance with Ecology guidance (Ecology, 2016a).

Aspect, in cooperation with the contractor, will be responsible for:

- Submitting representative soil samples for laboratory analysis and evaluating results to determine cost-effective treatment/disposal/reuse options; and
- Identifying candidate landfills and treatment/disposal facilities, and interfacing with facility representatives to complete the soil profiling/acceptance process.

Contaminated soils shall be "preapproved" for acceptance at the selected treatment/disposal facility before soil excavation begins. Laboratory results from soil sampling conducted during the November 2016 Site investigation may be accepted by treatment/disposal facilities for this purpose. These actions will be completed prior to construction and the outcome presented in the CMP. Additionally, Aspect will be responsible for:

- Providing soil loadout assistance to ensure that all paperwork (waste manifests, bills of lading, soil tickets) is in place, monitor soil loadout, and track final soil disposition.

4.5 Dewatering and Water Management

Dewatering is necessary to advance the soil excavation to the target depths. Water generated during the interim action will consist of groundwater from the perimeter wellpoint system and sump dewatering,[1]as well as any stormwater entering the excavation. A subset of the twelve monitoring wells proposed in the Final RIWP will be monitored to track dewatering progress and detect any changes in water quality (Leidos, 2017). Six of the proposed monitoring wells will be gauged daily during dewatering activities to monitor the propagation of drawdown outside of the excavation. Additionally, these six wells will be sampled weekly during initial dewatering activities and analyzed for GRO, DRO, ORO, and VOCs (EPA Method 8260). Once steady-state conditions are established, the sampling frequency will be reduced to monthly. The monitoring results and any changes to the monitoring will be communicated to Ecology at a minimum frequency of monthly. This dewatering monitoring and frequency is consistent with that of King County Discharge monitoring requirements described below and will be conducted concurrently.

All generated water will be pumped to tanks, pretreated on-site, and discharged to sanitary sewer under an issued King County Industrial Waste (KCIW) discharge authorization No. 4422-01 and a City of Seattle Side Sewer Permit for Temporary Dewatering (SSPTD). The KCIW discharge authorization permits a flow rate of up to 93,600 gallons per day (65 gallons per minute [gpm]) is provided as Appendix B. This authorization grants the discharge of contaminated stormwater runoff, excavation dewatering, well dewatering and wheel wash water. The issued permit details special

[1] A dewatering plan developed by The Riley Group, Inc. (RGI, 2016) includes well points installed at 15-foot spacing around the property perimeter.

conditions, general discharge limitations and self-monitoring requirements including daily monitoring of discharge rate, flow rate, pH and field parameters and monthly analytical monitoring of the discharge stream.

The on-site pretreatment system will include an oil/water separator to remove any LNAPL and granular activated carbon (if required) to remove dissolved-phase contaminants to achieve the KCIW discharge limits. The discharge will be monitored in accordance with the King County Discharge Authorization. If unanticipated liquid-phase contamination is encountered that is outside the scope of the discharge authorization, Aspect will assist the contractor in evaluating treatment/disposal options that comply with Ecology and local requirements.

5 Compliance Monitoring

In accordance with WAC 173-340-410, compliance monitoring includes the following elements:

- **Protection monitoring** confirms that human health and the environment are adequately protected during the cleanup action;
- **Performance monitoring** confirms that the cleanup action has attained cleanup levels and/or other performance standards, such as permit requirements; and
- **Confirmation monitoring** confirms the long-term effectiveness of the cleanup action once cleanup levels and/or other performance standards have been attained.

For this interim action, protection and performance monitoring will be conducted, as outlined below. Confirmation monitoring will be conducted as part of the final cleanup action for the Site, not as part of this interim action.

5.1 Protection Monitoring

Protection monitoring will be conducted during the interim action by requiring that on-site workers conducting the soil handling and management are appropriately trained in hazardous waste operations and follow applicable HASPs prepared specifically for this interim action project. Aspect's HASP for the interim action is provided as Attachment D. The general contractor will operate under its own HASP, as will any subcontractor performing site activities where hazardous materials may be contacted.

Protection monitoring includes real-time air monitoring within the worker breathing zone and at the downgradient property boundary. Air monitoring to be performed by Aspect is discussed in Aspect's HASP. Air monitoring data will be made available to on-Site workers and Ecology. Nothing in this Work Plan precludes contractors/consultants on-Site from choosing to conduct additional air monitoring.

5.2 Performance Monitoring

Performance monitoring will include laboratory analysis of both excavation sidewall and excavation bottom samples. The distance between samples will not exceed 20 feet, and closer sample spacing may be necessary. The samples will be submitted for laboratory analysis of parameters described in Section 4.3.3 and in accordance with the SAP/QAPP (Appendix C).

Once the assumed excavation depth of 24 ft bgs is reached, additional soil will be excavated at the four locations where soil cleanup level exceedances (for benzene) were detected at or below 24-foot depth (refer to Section 3.2 and Figure 6). Targeted excavations at these locations will extend to approximately one foot below the depths at which the benzene exceedances were detected (i.e., to 25 feet at AB-02 and AB-06; to 28 feet at AB-09; and to 34 feet at AB-07). The targeted excavations will be constructed using a unique shoring system (e.g., trench box). One bottom sample and four sidewall samples[2] from each targeted excavation[3] will be collected and submitted for BTEX analysis. If cleanup levels are exceeded in any sample, and if constructible, the localized excavation may be extended an additional 2 feet in that direction and a second round samples will be submitted for BTEX analysis.

For performance monitoring of the assumed excavation bottom at 24 ft bgs, Aspect will establish a three by four sampling grid that divides the excavation bottom into twelve equal-area rectangles with dimensions of approximately 34 feet by 40 feet. Within each rectangular area, Aspect will field-screen the soil for evidence of contamination, and samples will be collected for laboratory analysis of GRO and BTEX at up to four locations where contamination is potentially indicated. If there are no indications of contamination within the entire rectangular area, a single soil sample will be collected for analysis from the approximate center of the rectangle. Where sampling results indicate cleanup level exceedances in the bottom samples, and if feasible, soil may be over-excavated and resampled, following the procedure outlined above, until all sampling results are at or below the proposed cleanup levels.

6 Permits and Other Requirements

The following permits and/or other requirements are required for this soil removal interim action:

- Grading permit and SSPTD from the City of Seattle. The grading permit application, prepared by Caron Architecture, has been accepted by the City of Seattle Department of Construction and Inspections (Project No. 6499919).

[2] Sidewall samples will be collected at the four cardinal compass points, near the base of the excavation.

[3] If field-screening indicates the presence of contamination, Aspect may recommend that an excavation be further extended either downward or laterally prior to sample collection. This is unlikely, however, given the low concentrations detected in the November 2016 samples.

- There are low-levels of detections of chlorinated solvent degradation products (cis-1,2 Dichloroethene and vinyl chloride) ground water in the southwestern corner of the Property where soil is contaminated with petroleum hydrocarbons. There is one detection of cis-1,2 Dichloroethene in soil at 29 ft. bgs. The source of these detections is unknown and there is no known listed hazardous waste generator.

  In accordance with Ecology Dangerous Waste requirements, a contained-in determination must be permitted based on the detections. This permit will determine if the excavated soil (where cis-1,2 Dichloroethene and vinyl chloride was detected in groundwater) is exempt from hazardous waste requirements and will if any contingent management such as specific transportation and disposal requirements apply. Any soil management requirements of this permitted determination will be outlined in the CMP.

- Letter of authorization from KCIW to temporarily discharge dewatering water (following on-Site treatment) to sanitary sewer. The KCIW discharge authorization application package (Appendix B) has been submitted to KCIW. The SSPTD is an over-the-counter permit that will be obtained once the KCIW discharge authorization is approved.

- Approvals from the treatment/disposal facilities receiving the excavated soils that are not suitable for reuse. Aspect is responsible for obtaining the treatment/disposal facility approvals and the selected facilities will be identified in the CMP.

- Compliance with State Environmental Policy Act (SEPA), Chapter 43.21C RCW, will be achieved by conducting a SEPA review in accordance with applicable regulatory requirements including, WAC 197-11-268. A SEPA checklist (Appendix E) was submitted to Ecology on April 5, 2017. The checklist and Ecology's determination will be subject to public comment with this Work Plan.

7 Reporting

Upon completion of the interim action and in accordance with the Agreed Order, an Agency Review Draft Interim Action Report will be submitted within 60 days of receipt of all analytical data. The Report will describe the methods and outcome of the interim action, will be prepared and submitted to Ecology for review and comment. Ecology's comments will be incorporated into the Final Interim Action Report.

Pursuant to WAC 173-340-840(5), all sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with Section VII (Work to be Performed), Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements), and/or any subsequent procedures specified by Ecology for data submittal.

8 Schedule

Aspect submitted a letter to Ecology on May 10, 2017, requesting an extension to the schedule for initiating the Interim Action. The requested extension to initiate by no later than March 15, 2018, was approved by Ecology on July 10, 2017. It is estimated that the Interim Action total construction duration is two to three months. It is also expected that the RI activities proposed in the Final RIWP (Leidos, 2017) will be conducted prior to initiation of the Interim Action.

9 References

Aspect Consulting, LLC (Aspect), 2016, Preliminary Draft Remedial Investigation Work Plan, 4700 Brooklyn Ave., Seattle, Washington, November 4, 2016.

Aspect Consulting, LLC (Aspect), 2017a, Technical Memorandum to Washington State Department of Ecology (D. Myers) Re: On-Property Remedial Investigation Data Report, 4700 Brooklyn Avenue NE, Seattle, Washington, January 17, 2017.

Aspect Consulting, LLC (Aspect), 2017b, Technical Memorandum to Washington State Department of Ecology – UST Section Re: UST Site Assessment Report and Checklist, Chevron 90129 (UST ID No. 5046), 4700 Brooklyn Avenue NE, Seattle, Washington, March 3, 2017.

Leidos, 2017, Final Remedial Investigation Work Plan, Former Chevron Station No. 90129, May 26, 2017.

SAIC, 2013, First Quarter 2013 Ground water Monitoring and Sampling Report, Chevron Service Station No. 9-0129, July 10, 2013.

The Riley Group, Inc. (RGI), 2016, Chevron Station No. 9-0129 Dewatering Plan, 4700 Brooklyn Avenue Northeast, Seattle, Washington, January 27, 2016.

Washington State Department of Ecology (Ecology), 2004, Toxics Cleanup Program Policy 130A, Coordination of SEPA and MTCA, Revised July 28, 2004.

Washington State Department of Ecology (Ecology), 2016a, Guidance for Remediation of Petroleum Contaminated Sites, Ecology Publication No. 10-09-057, Revised June 2016.

Washington State Department of Ecology (Ecology), 2016b, TCP Data Validation and Sampling Analysis Plan (SAP)/ Quality Assurance Project Plan (QAPP), September 23, 2016.

10 Limitations

Work for this project was performed for FH Brooklyn (Client), and this report was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This report does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect

Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

TABLES

Table 1 - TPH and BTEX in Soil Exploration Samples

Project No. 160092, 4700 Brooklyn Avenue NE, Seattle, WA

Exploration ID/Date	Proposed Cleanup	AB-1/Nov 2016						AB-2/Nov 2016						AB-3/Nov 2016			
Sample ID	**Levels**	**AB-1-8**	**AB-1-14**	**AB-1-19**	**AB-1-24**	**AB-1-29**	**AB-1-35**	**AB-2-6**	**AB-2-10**	**AB-2-14**	**AB-2-17.5**	**AB-2-24**	**AB-2-28**	**AB-3-4**	**AB-3-8**	**AB-3-14**	**AB-3-19**
Sample Depth in Feet Below Ground Surface	**in mg/kg[(1)]**	**8 ft**	**14 ft**	**19 ft**	**24 ft**	**29 ft**	**35 ft**	**6 ft**	**10 ft**	**14 ft**	**17.5 ft**	**24 ft**	**28 ft**	**4 ft**	**8 ft**	**14 ft**	**19 ft**
Total Petroleum Hydrocarbons in mg/kg																	
Gasoline Range Organics	30	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	**6.6**	2 U	2 U	2 U	**3**	2 U
Diesel Range Organics	2,000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Motor Oil Range Organics	2,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
BTEX Compounds in mg/kg																	
Benzene	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.053**	0.02 U	0.02 U	0.02 U	**0.05**	0.02 U
Ethylbenzene	6	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.33**	0.02 U	0.02 U	0.02 U	**0.067**	0.02 U
Toluene	7	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.05**	0.02 U	0.02 U	0.02 U	**0.26**	0.02 U
Total Xylenes	9	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	**1**	0.06 U	0.06 U	**0.068**	**0.17**	0.06 U

J Analyte was positively identified. The reported result is an estimate.
U Analyte was not detected at or above the reported result.
ND Not detected; detection limit unknown
UJ Analyte was not detected at or above the reported estimate
X The sample chromatographic pattern does not resemble the fueld standard used for quantitation by the laboratory.
BTEX Benzene, toluene, ethylbenzene, and total xylenes
TPH Total petroleum hydrocarbon

Notes
1) Proposed cleanup levels are MTCA Method A cleanup levels for unrestricted land use.
2) Bold indicates detected analyte; shading indicates detection above proposed cleanup level.

Table 1 - TPH and BTEX in Soil Exploration Samples

Project No. 160092, 4700 Brooklyn Avenue NE, Seattle, WA

Exploration ID/Date	Proposed Cleanup	AB-3/Nov 2016	AB-4/Nov 2016						AB-5/Nov 2016							AB-6/Nov 2016	
Sample ID	**Levels**	**AB-3-24**	**AB-4-6**	**AB-4-10**	**AB-4-16.5**	**AB-4-19**	**AB-4-24**	**AB-4-29**	**AB-5-5**	**AB-5-10**	**AB-5-14**	**AB-5-19**	**AB-5-24**	**AB-5-29**	**AB-5-32**	**AB-6-8**	**AB-6-13**
Sample Depth in Feet Below Ground Surface	**in mg/kg[(1)]**	**24 ft**	**6 ft**	**10 ft**	**16.5 ft**	**19 ft**	**24 ft**	**29 ft**	**5 ft**	**10 ft**	**14 ft**	**19 ft**	**24 ft**	**29 ft**	**32 ft**	**8 ft**	**13 ft**
Total Petroleum Hydrocarbons in mg/kg																	
Gasoline Range Organics	30	2 U	2 U	2 U	**16**	2 U	2 U	2 U	2 U	2 U	2 U	**4**	**5.3**	2 U	2 U	**11**	2 U
Diesel Range Organics	2,000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Motor Oil Range Organics	2,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	**400**
BTEX Compounds in mg/kg																	
Benzene	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Ethylbenzene	6	0.02 U	0.02 U	0.02 U	**0.068**	0.02 U	**0.068**	**0.041**	0.02 U	0.02 U	0.02 U	**0.056**	**0.14**	0.02 U	0.02 U	0.02 U	0.02 U
Toluene	7	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Total Xylenes	9	0.06 U	0.06 U	0.06 U	**0.15**	0.06 U	**0.09**	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U

J Analyte was positively identified. The reported result is an estimate.
U Analyte was not detected at or above the reported result.
ND Not detected; detection limit unknown
UJ Analyte was not detected at or above the reported estimate
X The sample chromatographic pattern does not resemble the fueld standard used for quantitation by the laboratory.
BTEX Benzene, toluene, ethylbenzene, and total xylenes
TPH Total petroleum hydrocarbon

Notes
1) Proposed cleanup levels are MTCA Method A cleanup levels for unrestricted land use.
2) Bold indicates detected analyte; shading indicates detection above proposed cleanup level.

Table 1 - TPH and BTEX in Soil Exploration Samples

Project No. 160092, 4700 Brooklyn Avenue NE, Seattle, WA

Exploration ID/Date	Proposed Cleanup Levels in mg/kg[1]	AB-6/Nov 2016				AB-7/Nov 2016							AB-8/Nov 2016				
Sample ID		**AB-6-24**	**AB-6-17**	**AB-6-29**	**AB-6-33**	**AB-7-6**	**AB-7-10**	**AB-7-14**	**AB-7-19**	**AB-7-24**	**AB-7-29**	**AB-7-33**	**AB-8-6**	**AB-8-10**	**AB-8-14**	**AB-8-18**	**AB-8-24**
Sample Depth in Feet Below Ground Surface		**24 ft**	**17 ft**	**29 ft**	**33 ft**	**6 ft**	**10 ft**	**14 ft**	**19 ft**	**24 ft**	**29 ft**	**33 ft**	**6 ft**	**10 ft**	**14 ft**	**18 ft**	**24 ft**
Total Petroleum Hydrocarbons in mg/kg																	
Gasoline Range Organics	30	**3.9**	**920**	2 U	2 U	2 U	2 U	2 U	**1,100**	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Diesel Range Organics	2,000	50 U	**840**	50 U	50 U	**110 X**	50 U	50 U	**480 X**	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Motor Oil Range Organics	2,000	250 U	250 U	250 U	250 U	**1900**	250 U	250 U	250 U	250 U	250 U	250 U	**780**	250 U	250 U	250 U	250 U
BTEX Compounds in mg/kg																	
Benzene	0.03	**0.12**	0.02 UJ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.15 J**	**0.024**	0.02 U	**0.09**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Ethylbenzene	6	**0.39**	0.1 U	**0.087**	0.02 U	0.02 U	0.02 U	0.02 U	**8.2**	**0.16**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Toluene	7	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**4.3**	0.02 U	0.02 U	**0.074**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Total Xylenes	9	**0.073**	**1.5**	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	**7.5**	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U

J Analyte was positively identified. The reported result is an estimate.
U Analyte was not detected at or above the reported result.
ND Not detected; detection limit unknown
UJ Analyte was not detected at or above the reported estimate
X The sample chromatographic pattern does not resemble the fueld standard used for quantitation by the laboratory.
BTEX Benzene, toluene, ethylbenzene, and total xylenes
TPH Total petroleum hydrocarbon

Notes
1) Proposed cleanup levels are MTCA Method A cleanup levels for unrestricted land use.
2) Bold indicates detected analyte; shading indicates detection above proposed cleanup level.

Table 1 - TPH and BTEX in Soil Exploration Samples

Project No. 160092, 4700 Brooklyn Avenue NE, Seattle, WA

Exploration ID/Date	Proposed Cleanup	AB-8/Nov 2016		AB-9/Nov 2016						MW-01/Jan 1990		MW-02/Jan 1990		MW-03/Jan 1990		MW-04/Jan 1990	
Sample ID	**Levels**	**AB-8-29**	**AB-8-33**	**AB-9-5**	**AB-9-8**	**AB-9-14**	**AB-9-19**	**AB-9-24**	**AB-9-27**	**MW-1-7**	**MW-1-13**	**MW-2-8**	**MW-2-13**	**MW-3-13**	**MW-3-18**	**MW-4-15.5**	**MW-4-20.5**
Sample Depth in Feet Below Ground Surface	**in mg/kg[(1)]**	**29 ft**	**33 ft**	**5 ft**	**8 ft**	**14 ft**	**19 ft**	**24 ft**	**27 ft**	**7 ft**	**13 ft**	**8 ft**	**13 ft**	**13 ft**	**18 ft**	**15.5 ft**	**20.5 ft**
Total Petroleum Hydrocarbons in mg/kg																	
Gasoline Range Organics	30	2 U	2 U	**2.5**	2 U	2 U	**2.8**	2 U	2 U	ND	ND	ND	ND	ND	**5,568**	**3,267**	ND
Diesel Range Organics	2,000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	ND	ND	ND	ND	ND	ND	ND	ND
Motor Oil Range Organics	2,000	250 U	250 U	**520**	250 U	250 U	250 U	250 U	250 U								
BTEX Compounds in mg/kg																	
Benzene	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.06**	ND	ND	ND	ND	ND	**27.1**	**1.58**	ND
Ethylbenzene	6	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.039**	0.02 U	0.02 U	**0.1**	ND	**0.12**	**0.14**	ND	**88.1**	**9.71**	ND
Toluene	7	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	ND	ND	ND	ND	ND	**327**	**31.1**	ND
Total Xylenes	9	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	**0.28**	**0.18**	**0.14**	**0.31**	**0.21**	**614**	**52.6**	ND

J Analyte was positively identified. The reported result is an estimate.
U Analyte was not detected at or above the reported result.
ND Not detected; detection limit unknown
UJ Analyte was not detected at or above the reported estimate
X The sample chromatographic pattern does not resemble the fueld standard used for quantitation by the laboratory.
BTEX Benzene, toluene, ethylbenzene, and total xylenes
TPH Total petroleum hydrocarbon

Notes
1) Proposed cleanup levels are MTCA Method A cleanup levels for unrestricted land use.
2) Bold indicates detected analyte; shading indicates detection above proposed cleanup level.

Table 1 - TPH and BTEX in Soil Exploration Samples

Project No. 160092, 4700 Brooklyn Avenue NE, Seattle, WA

Exploration ID/Date	Proposed Cleanup	MW-05/Jan 1990		MW-06/Jan 1990		MW-07/Jan 1990		MW-08/Jan 1990		MW-09/Jan 1990		MW-10/Jan 1990	
Sample ID	**Levels**	**MW-5-5.5**	**MW-5-10.5**	**MW-6-10.5**	**MW-6-15.5**	**MW-7-8**	**MW-7-13**	**MW-8-13**	**MW-8-18**	**MW-9-8**	**MW-9-13**	**MW-10-8**	**MW-10-13**
Sample Depth in Feet Below Ground Surface	**in mg/kg[(1)]**	**5.5 ft**	**10.5 ft**	**10.5 ft**	**15.5 ft**	**8 ft**	**13 ft**	**13 ft**	**18 ft**	**8 ft**	**13 ft**	**8 ft**	**13 ft**
Total Petroleum Hydrocarbons in mg/kg													
Gasoline Range Organics	100	ND	ND	ND	ND								
Gasoline Range Organics	30	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diesel Range Organics	2,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Motor Oil Range Organics	2,000												
BTEX Compounds in mg/kg													
Benzene	0.03	ND	ND	ND	ND	ND	**0.17**	ND	ND	ND	ND	ND	ND
Ethylbenzene	6	ND	ND	ND	ND	ND	**0.17**	ND	ND	ND	ND	ND	ND
Toluene	7	ND	ND	ND	ND	ND	**0.25**	ND	ND	ND	ND	ND	ND
Total Xylenes	9	ND	ND	ND	ND	ND	**0.93**	**0.18**	ND	**0.33**	ND	ND	ND

J Analyte was positively identified. The reported result is an estimate.
U Analyte was not detected at or above the reported result.
ND Not detected; detection limit unknown
UJ Analyte was not detected at or above the reported estimate
X The sample chromatographic pattern does not resemble the fuel standard used for quantitation by the laboratory.
BTEX Benzene, toluene, ethylbenzene, and total xylenes
TPH Total petroleum hydrocarbon

Notes
1) Proposed cleanup levels are MTCA Method A cleanup levels for unrestricted land use.
2) Bold indicates detected analyte; shading indicates detection above proposed cleanup level.

Table 1 - TPH and BTEX in Soil Exploration Samples

Project No. 160092, 4700 Brooklyn Avenue NE, Seattle, WA

Exploration ID/Date	Proposed Cleanup	MW-11/Jan 1990		MW-12/Jan 1990		MW-13/Jan 1990		MW-14/Feb 1990		MW-15/Mar 2001	MW-16/Mar 2001
Sample ID	Levels	MW-11-13	MW-11-18	MW-12-13	MW-12-23	MW-13-8	MW-13	MW-14-10	MW-14-15	MW-15-15	MW-16-15
Sample Depth in Feet Below Ground Surface	in mg/kg[1]	13 ft	18 ft	13 ft	23 ft	8 ft	13 ft	10 ft	15 ft	15 ft	15 ft
Total Petroleum Hydrocarbons in mg/kg											
Gasoline Range Organics	30	ND	ND	ND	**45**	ND	ND	ND	ND	5 U	5 U
Diesel Range Organics	2,000	ND	ND	ND	ND	ND	ND	ND	ND	10 U	
Motor Oil Range Organics	2,000									25 U	
BTEX Compounds in mg/kg											
Benzene	0.03	ND	ND	ND	**0.77**	ND	ND	ND	ND	0.05 U	0.05 U
Ethylbenzene	6	ND	ND	ND	**1.44**	ND	ND	ND	ND	0.05 U	0.05 U
Toluene	7	ND	**0.14**	ND	**1.19**	ND	**0.12**	ND	ND	0.05 U	0.05 U
Total Xylenes	9	ND	**0.34**	**0.18**	**7.24**	ND	**0.35**	ND	ND	0.1 U	0.1 U

J Analyte was positively identified. The reported result is an estimate.
U Analyte was not detected at or above the reported result.
ND Not detected; detection limit unknown
UJ Analyte was not detected at or above the reported estimate
X The sample chromatographic pattern does not resemble the fuel standard used for quantitation by the laboratory.
BTEX Benzene, toluene, ethylbenzene, and total xylenes
TPH Total petroleum hydrocarbon

Notes
1) Proposed cleanup levels are MTCA Method A cleanup levels for unrestricted land use.
2) Bold indicates detected analyte; shading indicates detection above proposed cleanup level.

Table 1 - TPH and BTEX in Soil Exploration Samples

Project No. 160092, 4700 Brooklyn Avenue NE, Seattle, WA

Exploration ID/Date	Proposed Cleanup Levels in mg/kg[1]	P2/Feb 2015	P3/Feb 2015	P4/Feb 2015		P6/Feb 2015		P7/Feb 2015	P8/Feb 2015	SB-1/Oct 2010	
Sample ID		**P2-5**	**P3-5**	**P4-10**	**P4-15**	**P6-5**	**P6-13**	**P7-15**	**P8-14**	**SB-1-15**	**SB-1-17.5**
Sample Depth in Feet Below Ground Surface		**5 ft**	**5 ft**	**10 ft**	**15 ft**	**5 ft**	**13 ft**	**15 ft**	**14 ft**	**15**	**17.5**
Total Petroleum Hydrocarbons in mg/kg											
Gasoline Range Organics	30	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1.2 U	1.3 U
Diesel Range Organics	2,000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	3.3U	3.6 U
Motor Oil Range Organics	2,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	11 U	12 U
BTEX Compounds in mg/kg											
Benzene	0.03	0.02 U	0.02 U	**0.032**	**0.025**	0.02 U	**0.063**	0.02 U	0.02 U	0.0006 U	0.0005 U
Ethylbenzene	6	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.001 U	0.001 U
Toluene	7	0.02 U	0.02 U	**0.14**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.001 U	0.001 U
Total Xylenes	9	0.06 U	0.06 U	**0.10**	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.001 U	0.001 U

J Analyte was positively identified. The reported result is an estimate.
U Analyte was not detected at or above the reported result.
ND Not detected; detection limit unknown
UJ Analyte was not detected at or above the reported estimate
X The sample chromatographic pattern does not resemble the fueld standard used for quantitation by the laboratory.
BTEX Benzene, toluene, ethylbenzene, and total xylenes
TPH Total petroleum hydrocarbon

Notes
1) Proposed cleanup levels are MTCA Method A cleanup levels for unrestricted land use.
2) Bold indicates detected analyte; shading indicates detection above proposed cleanup level.

Table 2 - Other Analytes in Soil Exploration Samples

Project No. 160092, 4700 Brooklyn Avenue NE, Seattle, WA

Exploration ID/Date	Proposed Cleanup	AB-3/Nov 2016					AB-4/Nov 2016					
Sample ID	Levels	AB-3-4	AB-3-8	AB-3-14	AB-3-19	AB-3-24	AB-4-6	AB-4-10	AB-4-16.5	AB-4-19	AB-4-24	AB-4-29
Sample Depth in Feet Below Ground Surface	in mg/kg[1]	4 ft	8 ft	14 ft	19 ft	24 ft	6 ft	10 ft	16.5 ft	19 ft	24 ft	29 ft
Volatile Organic Compounds in mg/kg												
Methyl tert-butyl ether (MTBE)	0.1											
Naphthalene	5											
1,2-Dibromoethane (EDB)	0.005											
1,2-Dichloroethane (EDC)	480[3]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Tetrachloroethene (PCE)	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Trichloroethene (TCE)	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
1,1-Dichloroethene	4,000[3]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
cis-1,2-Dichloroethene (DCE)	160[3]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.066**
trans-1,2-Dichloroethene	1,600[3]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Vinyl Chloride	0.67[3]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methylene Chloride	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane	175[3]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Total Metals in mg/kg												
Cadmium	2											
Chromium	19/2,000[4]											
Lead	250											
Nickel	1,600[3]											
Zinc	24,000[3]											
Polychlorinated Biphenyls (PCBs) in mg/kg												
Aroclor 1016												
Aroclor 1221												
Aroclor 1232												
Aroclor 1242												
Aroclor 1248												
Aroclor 1254												
Aroclor 1260												
Aroclor 1262												
Aroclor 1268												
Total PCBs (Sum of Aroclors)	1											
Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) in mg/kg												
Benz(a)anthracene												
Benzo(a)pyrene												
Benzo(b)fluoranthene												
Benzo(k)fluoranthene												
Chrysene												
Dibenzo(a,h)anthracene												
Indeno(1,2,3-cd)pyrene												
Total cPAHs TEQ (ND = 1/2 RDL)	0.1											

J Analyte was positively identified. The reported result is an estimate.

U Analyte was not detected at or above the reported result.

UJ Analyte was not detected at or above the reported estimate

X The sample chromatographic pattern does not resemble the fueld standard used for quantitation by the laboratory.

Notes

1) Unless otherwise noted, proposed cleanup levels are MTCA Method A cleanup levels for unrestricted land use.
2) Bold indicates detected analyte; shading indicates detection above proposed cleanup level.

3) Method A does not have a soil cleanup level for vinyl chloride. The value listed is Method B - Soil Direct Contact.

4) Method A soil cleanup levels for Chromium IV/Chromium III

Table 2 - Other Analytes in Soil Exploration Samples

Project No. 160092, 4700 Brooklyn Avenue NE, Seattle, WA

Exploration ID/Date	Proposed Cleanup	AB-5/Nov 2016				AB-5/Nov 2016			AB-6/Nov 2016			AB-7/Nov 2016	
Sample ID	**Levels**	**AB-5-5**	**AB-5-10**	**AB-5-14**	**AB-5-19**	**AB-5-24**	**AB-5-29**	**AB-5-32**	**AB-6-13**	**AB-6-17**	**AB-6-24**	**AB-7-6**	**AB-7-19**
Sample Depth in Feet Below Ground Surface	**in mg/kg[1]**	**5 ft**	**10 ft**	**14 ft**	**19 ft**	**24 ft**	**29 ft**	**32 ft**	**13 ft**	**17 ft**	**24 ft**	**6 ft**	**19 ft**
Volatile Organic Compounds in mg/kg													
Methyl tert-butyl ether (MTBE)	0.1					0.05 U				0.05 U	0.05 U		0.05 U
Naphthalene	5					0.05 U				**6.4**	**0.084**		**3.5**
1,2-Dibromoethane (EDB)	0.005					0.005 U				0.005 UJ	0.005 U		0.005 UJ
1,2-Dichloroethane (EDC)	480[3]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.05 U	0.05 U		0.05 U
Tetrachloroethene (PCE)	0.05	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U					
Trichloroethene (TCE)	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U					
1,1-Dichloroethene	4,000[3]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U					
cis-1,2-Dichloroethene (DCE)	160[3]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U					
trans-1,2-Dichloroethene	1,600[3]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U					
Vinyl Chloride	0.67[3]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U					
Methylene Chloride	0.02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U					
1,1,1-Trichloroethane	2	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U					
1,1-Dichloroethane	175[3]	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U					
Chloroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U					
Total Metals in mg/kg													
Cadmium	2								1 U			1 U	
Chromium	19/2,000[4]								**23.3 J**			**17.5 J**	
Lead	250					**1.7**				**5.14**	**2.00**		**5.73**
Nickel	1,600[3]								**32.5 J**			**19.2 J**	
Zinc	24,000[3]								**21.8**			**32.4**	
Polychlorinated Biphenyls (PCBs) in mg/kg													
Aroclor 1016									0.2 U			0.2 U	
Aroclor 1221									0.2 U			0.2 U	
Aroclor 1232									0.2 U			0.2 U	
Aroclor 1242									0.2 U			0.2 U	
Aroclor 1248									0.2 U			0.2 U	
Aroclor 1254									0.2 U			0.2 U	
Aroclor 1260									0.2 U			0.2 U	
Aroclor 1262									0.2 U			0.2 U	
Aroclor 1268									0.2 U			0.2 U	
Total PCBs (Sum of Aroclors)	1								0.2 U			0.2 U	
Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) in mg/kg													
Benz(a)anthracene									0.01 UJ			0.1 UJ	
Benzo(a)pyrene									0.01 UJ			**0.11 J**	
Benzo(b)fluoranthene									0.01 UJ			**0.18 J**	
Benzo(k)fluoranthene									0.01 UJ			0.1 UJ	
Chrysene									0.01 UJ			**0.21 J**	
Dibenzo(a,h)anthracene									0.01 UJ			0.1 UJ	
Indeno(1,2,3-cd)pyrene									**0.011 J**			0.1 UJ	
Total cPAHs TEQ (ND = 1/2 RDL)	0.1								**0.008 J**			**0.15 J**	

J Analyte was positively identified. The reported result is an estimate.

U Analyte was not detected at or above the reported result.

UJ Analyte was not detected at or above the reported estimate

X The sample chromatographic pattern does not resemble the fueld standard used for quantitation by the laboratory.

Notes

1) Unless otherwise noted, proposed cleanup levels are MTCA Method A cleanup levels for unrestricted land use.
2) Bold indicates detected analyte; shading indicates detection above proposed cleanup level.

3) Method A does not have a soil cleanup level for vinyl chloride. The value listed is Method B - Soil Direct Contact.

4) Method A soil cleanup levels for Chromium IV/Chromium III

Table 2 - Other Analytes in Soil Exploration Samples

Project No. 160092, 4700 Brooklyn Avenue NE, Seattle, WA

Exploration ID/Date	Proposed Cleanup	AB-8/Nov 2016	AB-9/Nov 2016	MW-15/Mar 2001	MW-16/Mar 2001	P4/Feb 2015	P6/Feb 2015	SB-1/Oct 2010
Sample ID	**Levels**	**AB-8-6**	**AB-9-5**	**MW-15-15**	**MW-16-15**	**P4-10**	**P6-5**	**SB-1-15**
Sample Depth in Feet Below Ground Surface	**in mg/kg[1]**	**6 ft**	**5 ft**	**15 ft**	**15 ft**	**10 ft**	**5 ft**	**15**
Volatile Organic Compounds in mg/kg								
Methyl tert-butyl ether (MTBE)	0.1							0.006 U
Naphthalene	5							
1,2-Dibromoethane (EDB)	0.005							
1,2-Dichloroethane (EDC)	480[3]							
Tetrachloroethene (PCE)	0.05							
Trichloroethene (TCE)	0.03							
1,1-Dichloroethene	4,000[3]							
cis-1,2-Dichloroethene (DCE)	160[3]							
trans-1,2-Dichloroethene	1,600[3]							
Vinyl Chloride	0.67[3]							
Methylene Chloride	0.02							
1,1,1-Trichloroethane	2							
1,1-Dichloroethane	175[3]							
Chloroethane								
Total Metals in mg/kg								
Cadmium	2	1 U	1 U					
Chromium	19/2,000[4]	**15.5 J**	**21.6 J**					
Lead	250			**2.00**	**2.05**	**1.89**	**2.21**	**2.28**
Nickel	1,600[3]	**23 J**	**25.2 J**					
Zinc	24,000[3]	**42.2**	**49.7**					
Polychlorinated Biphenyls (PCBs) in mg/kg								
Aroclor 1016		0.2 U	0.2 U					
Aroclor 1221		0.2 U	0.2 U					
Aroclor 1232		0.2 U	0.2 U					
Aroclor 1242		0.2 U	0.2 U					
Aroclor 1248		0.2 U	0.2 U					
Aroclor 1254		0.2 U	0.2 U					
Aroclor 1260		0.2 U	0.2 U					
Aroclor 1262		0.2 U	0.2 U					
Aroclor 1268		0.2 U	0.2 U					
Total PCBs (Sum of Aroclors)	1	0.2 U	0.2 U					
Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) in mg/kg								
Benz(a)anthracene		**0.052 J**	0.01 UJ					
Benzo(a)pyrene		**0.052 J**	0.01 UJ					
Benzo(b)fluoranthene		**0.074 J**	**0.011 J**					
Benzo(k)fluoranthene		**0.025 J**	0.01 UJ					
Chrysene		**0.11 J**	**0.019 J**					
Dibenzo(a,h)anthracene		**0.011 J**	0.01 UJ					
Indeno(1,2,3-cd)pyrene		**0.025 J**	0.01 UJ					
Total cPAHs TEQ (ND = 1/2 RDL)	0.1	**0.072 J**	**0.008 J**					

J Analyte was positively identified. The reported result is an estimate.

U Analyte was not detected at or above the reported result.

UJ Analyte was not detected at or above the reported estimate

X The sample chromatographic pattern does not resemble the fueld standard used for quantitation by the laboratory.

Notes

1) Unless otherwise noted, proposed cleanup levels are MTCA Method A cleanup levels for unrestricted land use.

2) Bold indicates detected analyte; shading indicates detection above proposed cleanup level.

3) Method A does not have a soil cleanup level for vinyl chloride. The value listed is Method B - Soil Direct Contact.

4) Method A soil cleanup levels for Chromium IV/Chromium III

Table 3 - Ground Water Quality Results, November 2016

Project No. 160092, 4700 Brooklyn Avenue NE, Seattle, WA

	Proposed Cleanup Levels[1]	MW-02 11/21/2016	MW-03 11/21/2016	MW-3D 11/21/2016	MW-04 11/21/2016	MW-05 11/21/2016	MW-06 11/21/2016	MW-07 11/22/2016	MW-09 11/22/2016	MW-11 11/22/2016	MW-12 11/22/2016	MW-13 11/22/2016	MW-14 11/21/2016	MW-15 11/22/2016	MW-16 11/22/2016
Total Petroleum Hydrocarbons in ug/L															
Gasoline Range Organics (GRO)	800	< 100 U	**110**	**120**	**780**	< 100 U	< 100 U	< 100 U	**23,000**	**55,000**	**120,000**		< 100 U	< 100 U	**2,300**
Diesel Range Organics (DRO)	500	**58 X**	**170 X**	**120 X**	**810**	< 50 U	< 50 U	**200 X**	**3,500 X**	**4,500 X**	**8,800 X**		**110 X**	< 60 U	**660 X**
Motor Oil Range Organics (MORO)	500	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U		< 250 U	< 300 U	< 250 U
Metals in ug/L															
Lead (Dissolved)	15	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	**17.2 J**	**2.89 J**		< 1 UJ	< 1 UJ	< 1 UJ
Volatile Organic Compounds in ug/L															
Benzene	5	< 0.35 U	< 0.35 U	< 0.35 U	< 0.35 U	< 0.35 U	< 0.35 U	< 0.35 U	**940**	**90**	**5,500**		< 0.35 U	< 0.35 U	**77**
Toluene	1,000	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	**740**	**530**	**6,300**		< 1 U	< 1 U	**2.6**
Ethylbenzene	700	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	**420**	**1,500**	**2,300**		< 1 U	< 1 U	**100**
m,p-Xylenes		< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	**660**	**5,800**	**10,000**		< 2 U	< 2 U	**5.3**
o-Xylene		< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	**110**	**1,300**	**4,100**		< 1 U	< 1 U	**1.1**
Total Xylenes	1,000	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	**770**	**7,100**	**14,100**		< 2 U	< 2 U	**6.4**
Methyl tert-butyl ether (MTBE)	20	< 1 U	< 1 U	< 1 U	**1.8**	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U		< 1 U	< 1 U	< 1 U
Tetrachloroethene (PCE)	5								< 1 U	< 1 U		< 1 U			
Trichloroethene (TCE)	5								< 1 U	< 1 U		< 1 U			
1,1-Dichloroethene	400[3]								< 1 U	< 1 U		< 1 U			
cis-1,2-Dichloroethene (DCE)	16[3]								**15**	**9.7**		**15**			
trans-1,2-Dichloroethene	160[3]								< 1 U	< 1 U		**1**			
Vinyl Chloride	0.2								< 0.2 U	< 0.2 U		**0.22**			
1,1,1-Trichloroethane	200								< 1 U	< 1 U		< 1 U			
1,1-Dichloroethane	7.68[3]								< 1 U	< 1 U		< 1 U			
1,2-Dichloroethane (EDC)	5								**21**	< 1 U		< 1 U			
Chloroethane									< 1 U	< 1 U		< 1 U			
Methylene Chloride	5								< 5 U	< 5 U		< 5 U			

J Analyte was positively identified. The reported result is an estimate.
U Analyte was not detected at or above the reported result.
UJ Analyte was not detected at or above the reported estimate
X The sample chromatographic pattern does not resemble the fuel standard used for quantitation by the laboratory.

Notes:

1) Unless otherwise noted, proposed cleanup levels are MTCA Method A cleanup levels for unrestricted land use.
2) Bold indicates detected analyte; shading indicates detection above proposed cleanup level.
3) There is no Method A groundwater cleanup level. The value listed is Method B - noncancer.

FIGURES

Site Location Map

Interim Action Work Plan
4700 Brooklyn Avenue NE
Seattle, Washington

DRAFT

Aspect CONSULTING	JUL-2017	BY: DLC / EAC	FIGURE NO. 1
	PROJECT NO. 160092	REVISED BY: SCC / KES	

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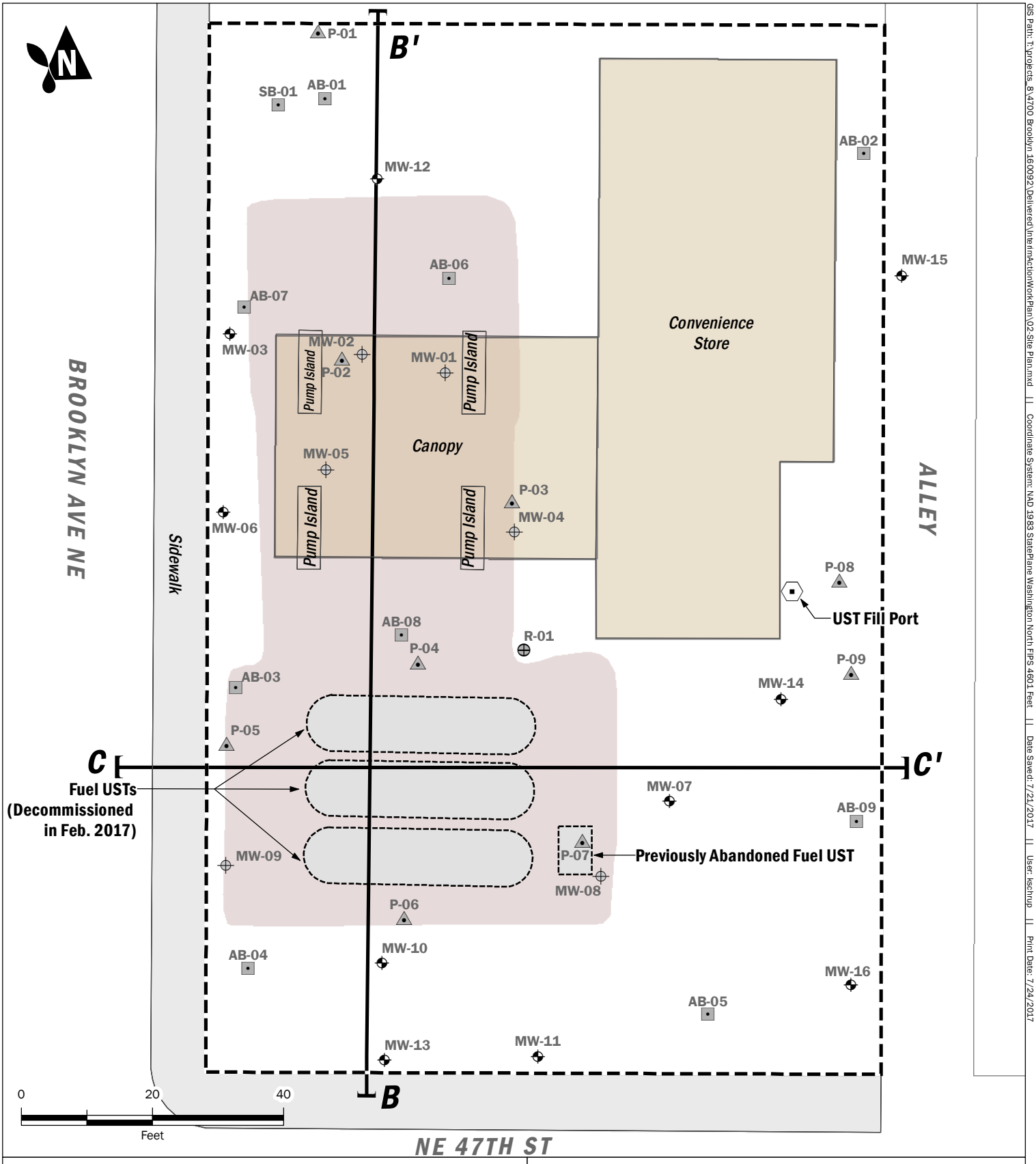


Monitoring Well
Abandoned in Feb. 2017

Monitoring Well

Product Recovery Well
Abandoned in Feb. 2017

Soil Boring

Test Probe

Property Boundary

1990 Soil Excavation

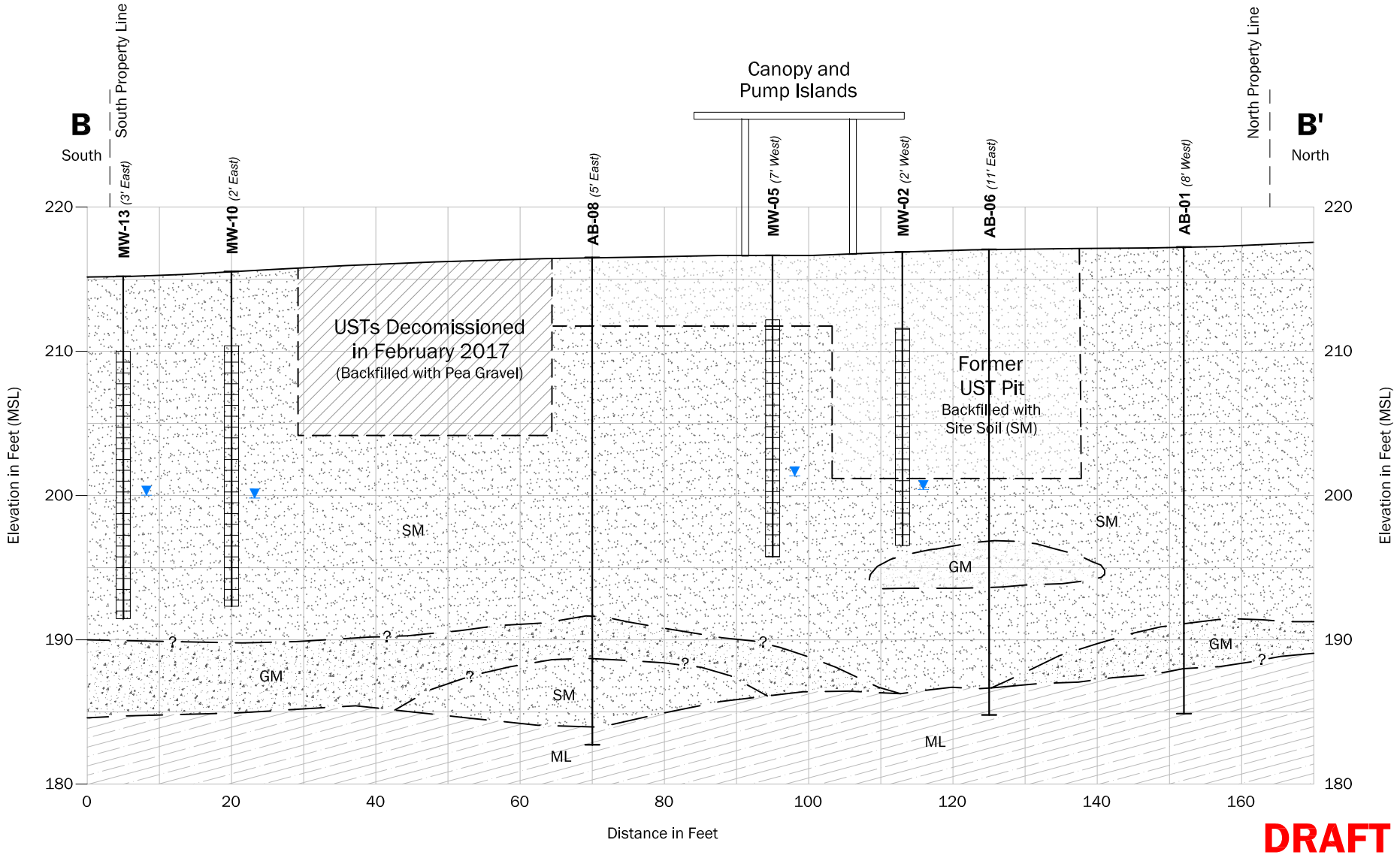
Cross Section

Site Plan

Interim Action Work Plan
4700 Brooklyn Avenue NE
Seattle, Washington

DRAFT

Aspect CONSULTING	JUL-2017	BY: DAH / EAC	FIGURE NO. 2
	PROJECT NO. 160092	REVISED BY: ACG/ KES	



Gray fine to medium sand with silt and occasional gravel. Grades from loose to dense with depth (SM).

Moist gray sandy, silty gravel. Fine to coarse subrounded gravel (GM).

Medium stiff to hard gray silt (ML).

Groundwater Elevation (November 2016)

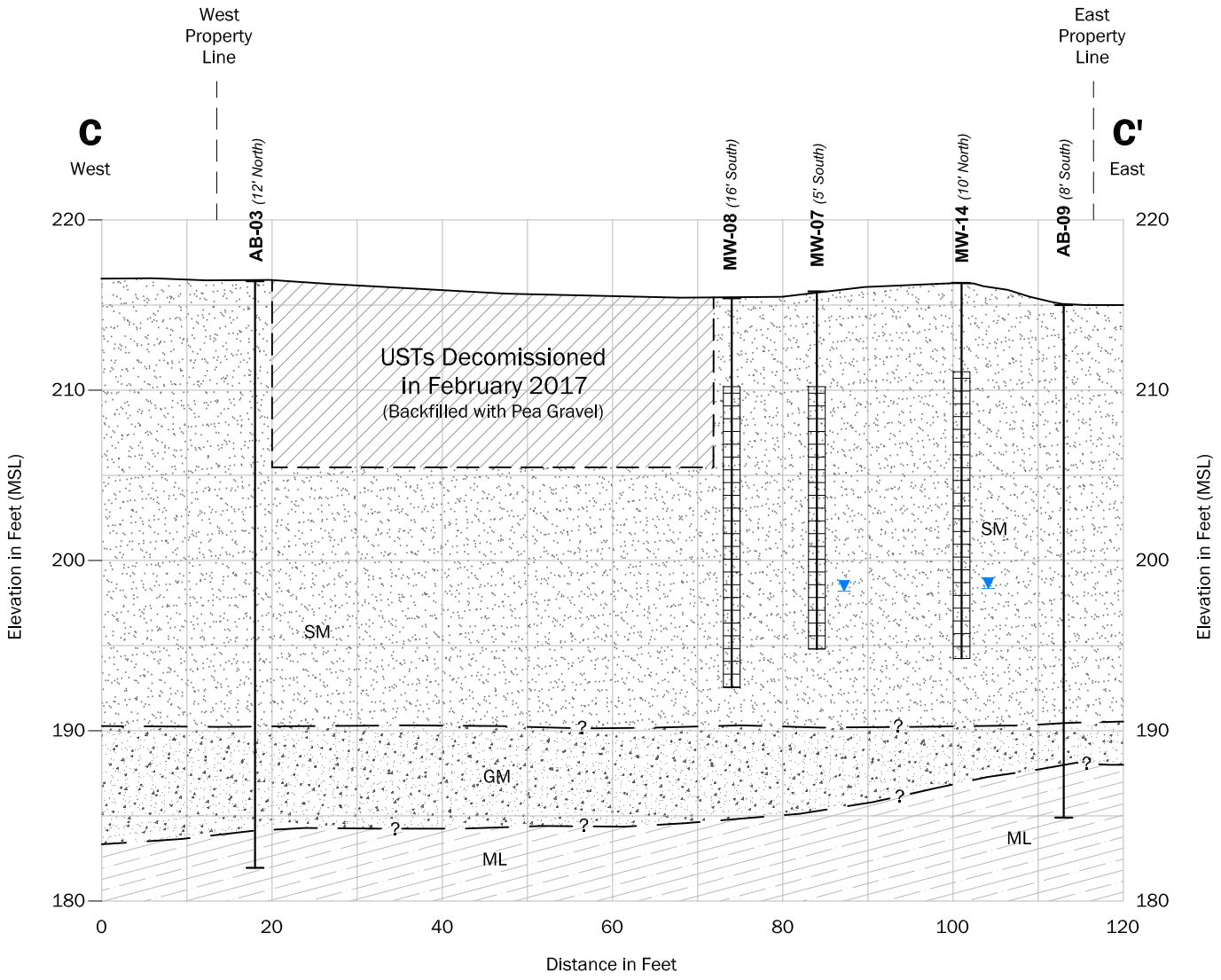
Horizontal Scale: 1" = 20'
Vertical Scale: 1" = 10'
Vertical Exaggeration 2x

0 20 40 Feet

Cross Section B-B'

Interim Action Work Plan
4700 Brooklyn Avenue NE
Seattle, Washington

Aspect Consulting	Jul-2017	BY: ACG/SCC	FIGURE NO. 3
	PROJECT NO. 160092	REV BY: SCC	



DRAFT

Gray fine to medium sand with silt and occasional gravel. Grades from loose to dense with depth (SM).

Moist gray sandy, silty gravel. Fine to coarse subrounded gravel (GM).

Medium stiff to hard gray silt (ML).

Groundwater Elevation (November 2016)

Note: MW-08 was dry. Sediment observed in well at 10.6 feet below ground surface.

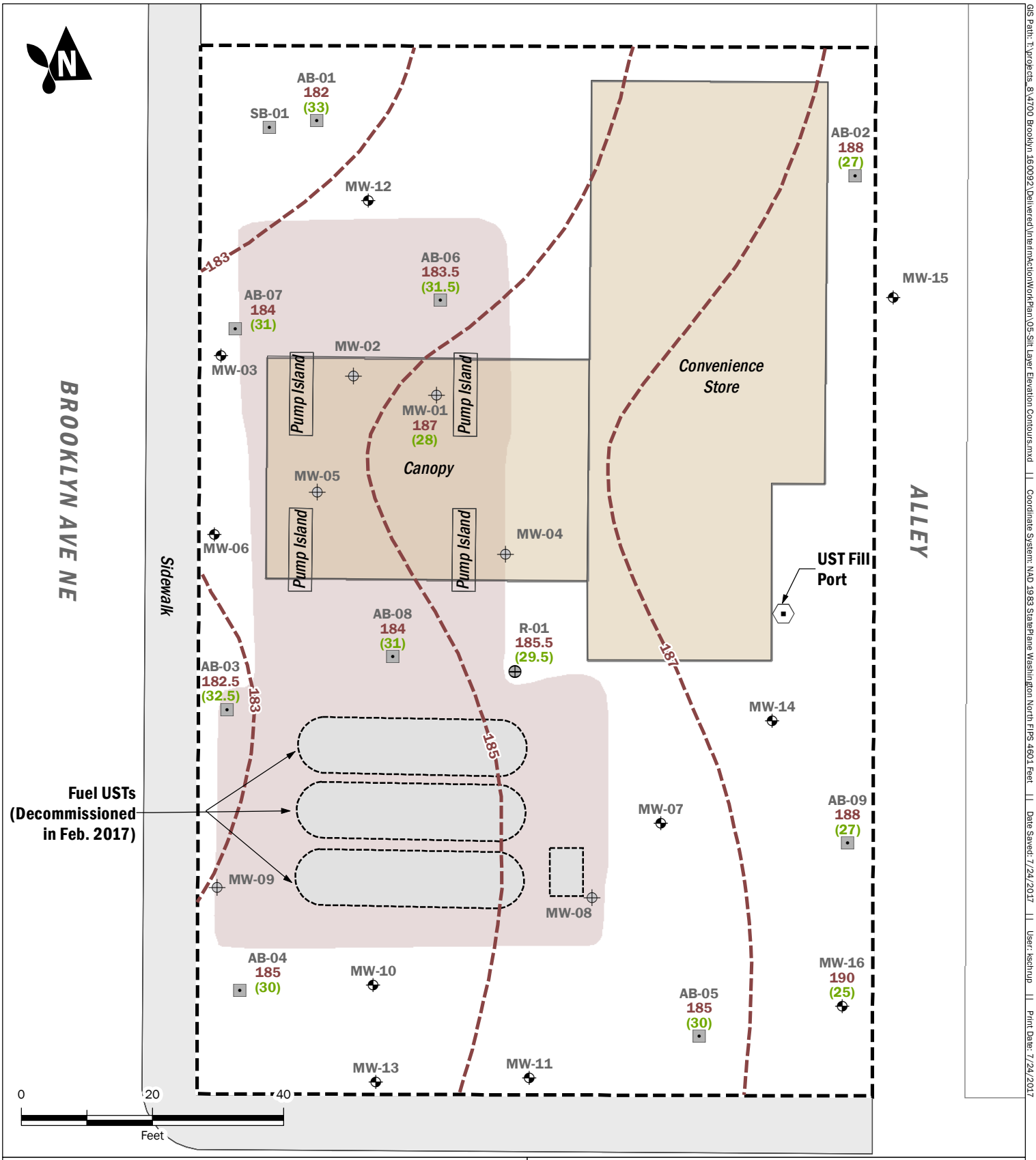
Horizontal Scale: 1" = 20'
Vertical Scale: 1" = 10'
Vertical Exaggeration 2x

0 20 40 Feet

Cross Section C-C'

Interim Action Work Plan
4700 Brooklyn Avenue NE
Seattle, Washington

Aspect Consulting	Jul-2017	BY: ACG/SCC	FIGURE NO. 4
	PROJECT NO. 160092	REV BY: SCC	



Monitoring Well
Abandoned in Feb. 2017

Monitoring Well

Product Recovery Well
Abandoned in Feb. 2017

Soil Boring

Property Boundary

1990 Soil Excavation

Silt Layer Elevation Contour in feet (NAVD88)

Exploration ID
AB-04
185
(30)
Approximate Silt Layer Elevation (feet)
Approximate Silt Layer Depth Below Ground Surface (feet)

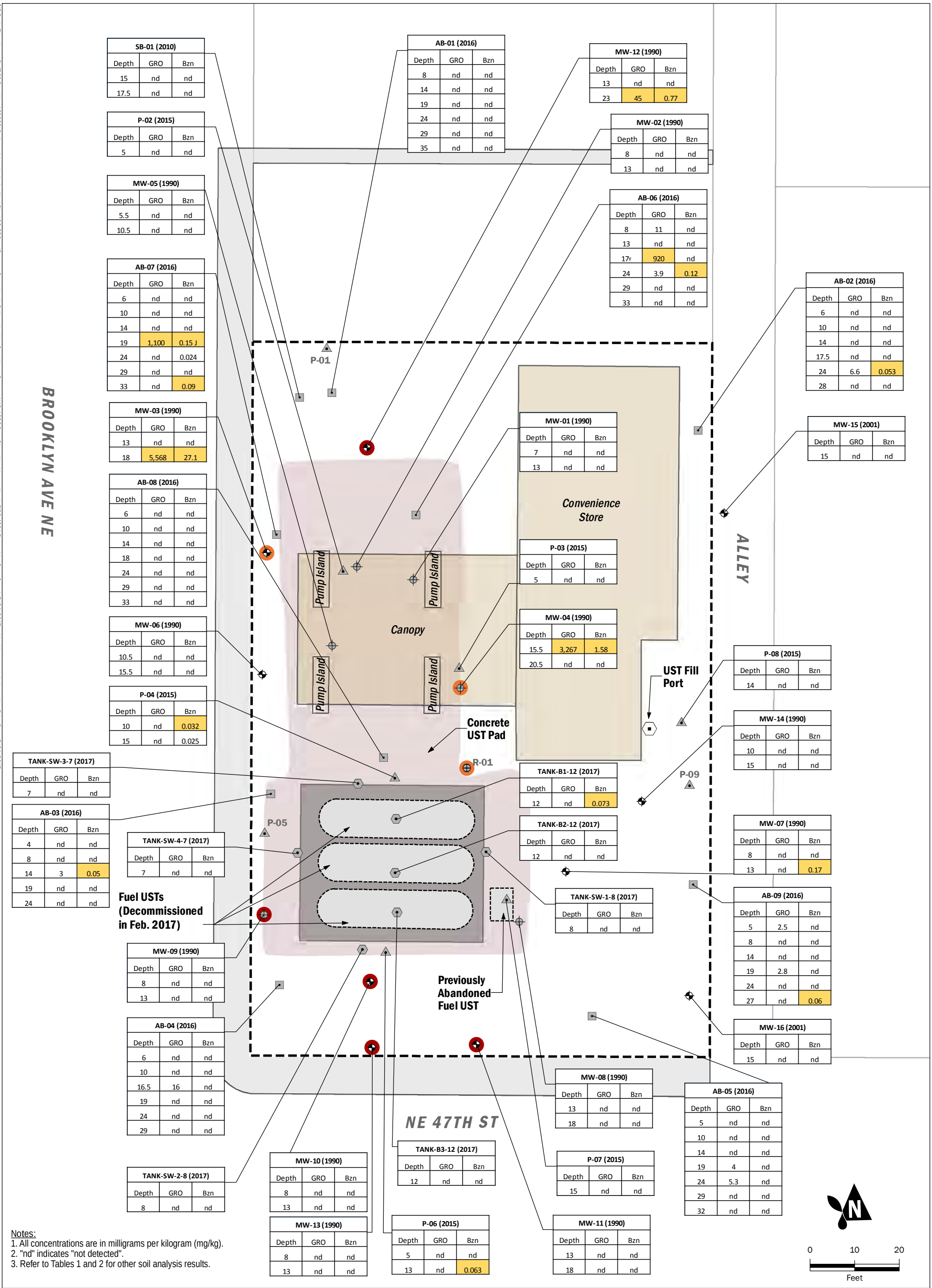
Silt Layer Elevation Contours

Interim Action Work Plan
4700 Brooklyn Avenue NE
Seattle, Washington

DRAFT

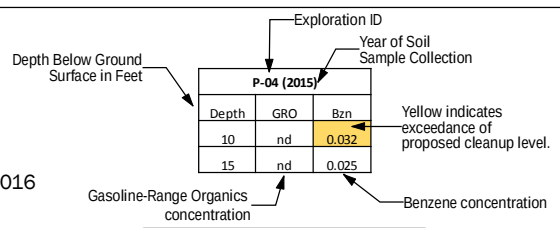
Aspect CONSULTING	JUL-2017	BY: DAH / EAC	FIGURE NO. 5
	PROJECT NO. 160092	REVISED BY: ACG/ KES	

GIS Path: T:\projects_8\4700 Brooklyn 160092\Delivered\InterimActionWorkPlan\05-Silt Layer Elevation Contours.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 7/24/2017 || User: kschrup || Print Date: 7/24/2017



Notes:
1. All concentrations are in milligrams per kilogram (mg/kg).
2. "nd" indicates "not detected".
3. Refer to Tables 1 and 2 for other soil analysis results.

- UST Site Assessment Location
- Monitoring Well *Abandoned in Feb. 2017*
- Monitoring Well
- Product Recovery Well *Abandoned in Feb. 2017*
- Soil Boring
- Test Probe
- LNAPL observed on 11/21/16
- LNAPL detected prior to 2016
- Property Boundary
- 1990 Soil Excavation



Proposed Cleanup Levels in mg/kg	
Gasoline Range Organics	30
Benzene	0.03

GRO and Benzene Detections in Soil

Interim Action Work Plan
4700 Brooklyn Avenue NE
Seattle, Washington

DRAFT

Aspect Consulting	JUL-2017	BY: DLC / EAC	FIGURE NO. 6
	PROJECT NO. 160092	REVISED BY: DAH	

MW-12[5]		
GRO	DRO	Bzn
120,000	8,800 X	5,500

200.37

MW-02		
GRO	DRO	Bzn
nd	58 X	nd

MW-03		
GRO	DRO	Bzn
110	170 X	nd

200.19

MW-05		
GRO	DRO	Bzn
nd	nd	nd

200.42

MW-01

Pump Island

Pump Island

Canopy

Pump Island

Pump Island

Convenience Store

MW-15		
GRO	DRO	Bzn
nd	nd	nd

199.56

ALLEY

MW-06		
GRO	DRO	Bzn
nd	nd	nd

201.37

201.61

201

MW-04		
GRO	DRO	Bzn
780	810	nd

200.00

UST Fill Port

200

MW-14		
GRO	DRO	Bzn
nd	110 X	nd

198.35

199

R-01

Fuel USTs (Decommissioned in Feb. 2017)

MW-09[5]		
GRO	DRO	Bzn
23,000	3,500 X	940

200.03

MW-07		
GRO	DRO	Bzn
nd	200 X	nd

198.19

Previously Abandoned Fuel UST

MW-08

Concrete UST Pad

MW-10[6]
198.30
(0.98)

MW-16		
GRO	DRO	Bzn
2,300	660 X	77

198.97

MW-13[6]
199.80
(0.11)

199.55

MW-11[5]		
GRO	DRO	Bzn
55,000	4,500 X	90

NE 47TH ST

Groundwater Elevation (feet) → MW-13 (Well Name) 199.80 (0.11) (Light Non-Aqueous-Phase Liquid (LNAPL) Thickness in Feet)

- Monitoring Well *Abandoned in Feb. 2017*
- Monitoring Well
- Product Recovery Well *Abandoned in Feb. 2017*
- Groundwater Elevation in feet (NAVD88)
- LNAPL observed on 11/21/16
- LNAPL observed prior to 2016
- Property Boundary
- 1990 Soil Excavation

Proposed Cleanup Levels in µg/L	
Gasoline Range Organics	800
Diesel Range Organics	500
Benzene	5

Well ID → MW-04

GRO	DRO	Bzn
780	810	nd

Yellow indicates exceedance of proposed cleanup level.

Gasoline-Range Organics concentration

Diesel-Range Organics concentration

Benzene concentration

Notes:
1. All concentrations are in micrograms per liter (µg/L).
2. "nd" indicates "not detected".
3. "X" indicates the sample chromatographic pattern did not resemble the fuel standard used for quantitation.
4. Refer to Table 3 for data on other analytes.
5. LNAPL sheen was observed on the groundwater surface in this well.
6. The groundwater elevation shown has been corrected to account for the presence of LNAPL.

N

0 7.5 15
Feet

Ground Water and LNAPL Conditions November 2016

DRAFT

Interim Action Work Plan
4700 Brooklyn Avenue NE
Seattle, Washington

Aspect Consulting	JUL-2017	BY: DLC / EAC	FIGURE NO. 7
	PROJECT NO. 160092	REVISED BY: DAH / ACG / KES	

APPENDIX A

Exploration Logs

Coarse-Grained Soils - More than 50% (1) Retained on No. 200 Sieve	Gravels - More than 50% (1) of Coarse Fraction Retained on No. 4 Sieve	≤5% Fines (5)	GW	Well-graded gravel and gravel with sand, little to no fines
			GP	Poorly-graded gravel and gravel with sand, little to no fines
		≥15% Fines (5)	GM	Silty gravel and silty gravel with sand
			GC	Clayey gravel and clayey gravel with sand
	Sands - 50% (1) or More of Coarse Fraction Passes No. 4 Sieve	≤5% Fines (5)	SW	Well-graded sand and sand with gravel, little to no fines
			SP	Poorly-graded sand and sand with gravel, little to no fines
		≥15% Fines (5)	SM	Silty sand and silty sand with gravel
			SC	Clayey sand and clayey sand with gravel
Fine-Grained Soils - 50% (1) or More Passes No. 200 Sieve	Silts and Clays Liquid Limit Less than 50		ML	Silt, sandy silt, gravelly silt, silt with sand or gravel
			CL	Clay of low to medium plasticity; silty, sandy, or gravelly clay, lean clay
			OL	Organic clay or silt of low plasticity
	Silts and Clays Liquid Limit 50 or More		MH	Elastic silt, clayey silt, silt with micaceous or diato-maceous fine sand or silt
			CH	Clay of high plasticity, sandy or gravelly clay, fat clay with sand or gravel
			OH	Organic clay or silt of medium to high plasticity
Highly Organic Soils			PT	Peat, muck and other highly organic soils

Terms Describing Relative Density and Consistency

	Density	SPT (2) blows/foot
Coarse-Grained Soils	Very Loose	0 to 4
	Loose	4 to 10
	Medium Dense	10 to 30
	Dense	30 to 50
	Very Dense	>50
	Consistency	**SPT (2) blows/foot**
Fine-Grained Soils	Very Soft	0 to 2
	Soft	2 to 4
	Medium Stiff	4 to 8
	Stiff	8 to 15
	Very Stiff	15 to 30
	Hard	>30

Test Symbols

FC = Fines Content
G = Grain Size
M = Moisture Content
A = Atterberg Limits
C = Consolidation
DD = Dry Density
K = Permeability
Str = Shear Strength
Env = Environmental
PiD = Photoionization Detector

Component Definitions

Descriptive Term	Size Range and Sieve Number
Boulders	Larger than 12"
Cobbles	3" to 12"
Gravel	3" to No. 4 (4.75 mm)
Coarse Gravel	3" to 3/4"
Fine Gravel	3/4" to No. 4 (4.75 mm)
Sand	No. 4 (4.75 mm) to No. 200 (0.075 mm)
Coarse Sand	No. 4 (4.75 mm) to No. 10 (2.00 mm)
Medium Sand	No. 10 (2.00 mm) to No. 40 (0.425 mm)
Fine Sand	No. 40 (0.425 mm) to No. 200 (0.075 mm)
Silt and Clay	Smaller than No. 200 (0.075 mm)

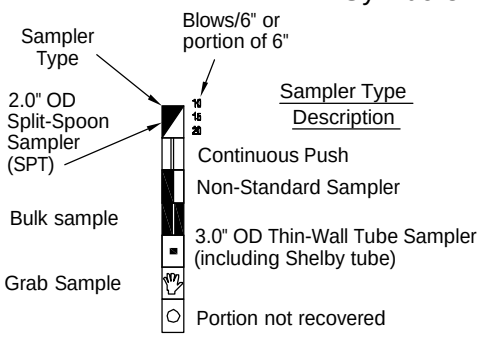
(3) Estimated Percentage

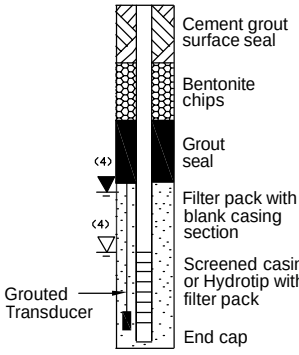
Percentage by Weight	Modifier
<5	Trace
5 to 15	Slightly (sandy, silty, clayey, gravelly)
15 to 30	Sandy, silty, clayey, gravelly)
30 to 49	Very (sandy, silty, clayey, gravelly)

Moisture Content

Dry - Absence of moisture, dusty, dry to the touch
Slightly Moist - Perceptible moisture
Moist - Damp but no visible water
Very Moist - Water visible but not free draining
Wet - Visible free water, usually from below water table

Symbols





(1) Percentage by dry weight
(2) (SPT) Standard Penetration Test (ASTM D-1586)
(3) In General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488)
(4) Depth of groundwater — ATD = At time of drilling; Static water level (date); BGS = below ground surface
(5) Combined USCS symbols used for fines between 5% and 15% as estimated in General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488)

Classifications of soils in this report are based on visual field and/or laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual and/or laboratory classification methods of ASTM D-2487 and D-2488 were used as an identification guide for the Unified Soil Classification System.

Aspect CONSULTING

Exploration Log Key

DATE:
DESIGNED BY:
DRAWN BY:
REVISED BY:

PROJECT NO.

FIGURE NO.
A-1

Q:_ACAD Standards\Standard Details\Exploration Log Key A1.dwg

Aspect CONSULTING	Brooklyn Ave - 160092		Environmental Exploration Log	
	Project Address & Site Specific Location 4700 Brooklyn Ave NE, Seattle, WA, Northwest property corner		*Coordinates (SPN NAD83 ft)* E:1275572 N:245566	*Exploration Number* **AB-1**
Contractor Holt Services	*Equipment* Rotary drill rig	*Sampling Method* Rotary core	*Ground Surface (GS)* *Elev.* 215' (est)	
Operator Dave	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 11/9/2016	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* Not Measured

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0	215	Concrete surface seal					Asphalt	0
							Slightly moist, brown, gravelly, slightly silty SAND (SP-SM); fine to medium sand, fine to coarse subrounded gravel, no odor.	
		Backfilled with bentonite chips						
5	210		S1				Vacuumed to 6 ft	5
							Moist, brown, SAND (SP); trace fine subrounded gravel, fine to medium sand, no odor, no sheen.	
				AB-1-8 NWTPH-Gx, -Dx, BTEX	PID= 0.1			
					PID= 0.3			
10	205							10
				AB-1-14 NWTPH-Gx, -Dx, BTEX	PID= 0.4			
15	200		S2					15
				AB-1-19 NWTPH-Gx, -Dx, BTEX				
20	195						Grades to gray brown	20
					PID= 1.0			
				AB-1-24 NWTPH-Gx, -Dx, BTEX	PID= 0.2			
25	190		S3		PID= 6.8			25
					PID= 2.1			
				AB-1-29 NWTPH-Gx, -Dx, BTEX				
30	185				PID= 0.0		Very moist, gray, sandy, silty GRAVEL (GM); fine to coarse sand, fine to coarse subrounded gravel, slight product odor, no sheen.	30
			S4		PID= 3.1		Hard, moist, gray, slightly sandy SILT (ML); fine sand, with low plasticity, no odor, no sheen.	
35	180			AB-1-35 NWTPH-Gx, -Dx, BTEX	PID= 0.0		Bottom of exploration at 35 ft. bgs.	35

Legend

Sample Method: Continuous core 4" ID

Water Level: Not Measured

See Exploration Log Key for explanation of symbols

Logged by: MML
Approved by: DC & ADG

Exploration Log AB-1

Sheet 1 of 1

Aspect CONSULTING	Brooklyn Ave - 160092		Environmental Exploration Log	
	Project Address & Site Specific Location 4700 Brooklyn Ave NE, Seattle, WA, Northeast property corner		*Coordinates (SPN NAD83 ft)* E:1275654 N:245555	*Exploration Number* **AB-2**
Contractor Holt Services	*Equipment* Rotary drill rig	*Sampling Method* Rotary core	*Ground Surface (GS)* *Elev.* 215' (est)	
Operator Dave	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 11/8/2016	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 18' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0	215	Concrete surface seal					Asphalt	0
							Moist, brown, gravelly, slightly silty SAND (SP-SM); fine to medium sand, fine subrounded gravel, no odor, no sheen.	
5	210	Backfilled with bentonite chips	S1					5
				Soil: AB-2-8 NWTPH-Gx, - Dx, BTEX	PID= 0.0		Moist, brown, gravelly, SAND (SP); trace silt, fine to medium sand, fine subrounded gravel, no odor, no sheen.	
							No silt observed.	
10	205			Soil: AB-2-10 NWTPH-Gx, - Dx, BTEX	PID= 6.0			10
				Soil: AB-2-14 NWTPH-Gx, - Dx, BTEX	PID= 9.4			
15	200		S2					15
		▽ 11/8/2016		Soil: AB-2-17.5 NWTPH-Gx, - Dx, BTEX			Becomes gray with weak product odor.	
							Wet, gray, sandy, slightly silty GRAVEL (GP-GM); fine to coarse sand, fine subrounded gravel, weak product odor.	
20	195						Becomes silty GRAVEL (GM); with weak product odor.	20
				Soil: AB-2-24 NWTPH-Gx, - Dx, BTEX	PID= 4.4			
25	190		S3				Moist to very moist, gray SAND (SP); fine to medium sand, with weak product odor, no sheen.	25
							Wet, gray, sandy, silty GRAVEL (GM); fine to coarse sand, fine subrounded gravel, with weak product odor.	
				Soil: AB-2-28 NWTPH-Gx, - Dx, BTEX	PID= 6.6		Hard, moist, gray, slightly sandy SILT (ML); fine sand, with low to none plasticity, no odor, no sheen.	
30	185						Bottom of exploration at 30 ft. bgs.	30
35	180							35

Legend

Sample Method
- ◯ No Soil Sample Recovery
- ◧ Continuous core 7"

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: MML
Approved by: DC & ADG

Exploration Log AB-2
Sheet 1 of 1

Aspect CONSULTING	Brooklyn Ave - 160092		Environmental Exploration Log	
	Project Address & Site Specific Location 4700 Brooklyn Ave NE, Seattle, WA, Western property line		*Coordinates (SPN NAD83 ft)* E:1275556 N:245476	*Exploration Number* **AB-3**
Contractor Holt Services	*Equipment* Rotary drill rig	*Sampling Method* Rotary core	*Ground Surface (GS)* *Elev.* 215' (est)	
Operator Dave	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 11/7/2016	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 28' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0	215	Concrete surface seal					Asphalt	0
							Moist, brown slightly silty SAND (SP-SM); fine to medium sand, fine subrounded gravel, with no odor.	
5	210	Backfilled with bentonite chips	S1	Soil: AB-3-4 NWTPH-Gx, -Gx, BTEX, CVOCs	PID= 6.6			5
					PID= 17.1		Becomes silty SAND (SM); fine to medium sand, with weak product odor, no sheen.	
				Soil: AB-3-8 NWTPH-Gx, -Gx, BTEX, CVOCs	PID= 21.4		Moist, brown, SAND (SP); fine to medium sand, with weak product odor, no sheen.	
10	205							10
15	200		S2	Soil: AB-3-14 NWTPH-Gx, -Gx, BTEX, CVOCs	PID= 36.4		Becomes gray brown, product odor weaker with depth.	15
					PID= 26.6		Becomes brown.	
20	195		S3	Soil: AB-3-19 NWTPH-Gx, -Gx, BTEX, CVOCs				20
25	190			Soil: AB-3-24 NWTPH-Gx, -Gx, BTEX, CVOCs	PID= 4.4		Moist, brown to black, sandy, silty GRAVEL (GM); fine to medium sand, fine to coarse subrounded gravel, with no odor, no sheen.	25
							Grades to gray brown.	
		▽ 11/7/2016	S4		PID= 3.1		Moist, brown, slightly gravelly SAND (SP); fine to medium sand, fine subrounded gravel, with no odor.	
30	185						Wet, gray brown, slightly silty GRAVEL (GW-GM); fine to medium sand, fine to coarse subrounded gravel, with no sheen.	30
							Becomes silty GRAVEL (GM)	
			S5		PID= 0.0		Hard, moist, gray, slightly sandy SILT (ML); fine sand, with no odor.	
35	180						Bottom of exploration at 30 ft. bgs.	35

Legend

Sample Method
- ◯ No Soil Sample Recovery
- ◧ Continuous core 7"

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: MML
Approved by: DC & ADG

Exploration Log AB-3
Sheet 1 of 1

Aspect CONSULTING	Brooklyn Ave - 160092		Environmental Exploration Log	
	Project Address & Site Specific Location 4700 Brooklyn Ave NE, Seattle, WA, Southwest property corner		*Coordinates (SPN NAD83 ft)* E:1275557 N:245434	*Exploration Number* **AB-4**
Contractor Holt Services	*Equipment* Rotary drill rig	*Sampling Method* Rotary core	*Ground Surface (GS)* *Elev.* 215' (est)	
Operator Dave	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 11/8/2016	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 28' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0	215	Concrete surface seal					Asphalt	0
							Moist, brown, gravelly, silty SAND (SM); fine to medium sand, fine subrounded gravel, with no odor.	
							Vacuumed out from 0 to 6 ft bgs for utilities.	
5	210	Backfilled with bentonite chips		Soil: AB-4-6 NWTPH-Gx, -Gx, BTEX, CVOCs	PID= 15.5			5
					PID= 450			
10	205			Soil: AB-4-10 NWTPH-Gx, -Gx, BTEX, CVOCs	PID= 66.3		Moist, brown SAND (SP); fine to medium sand.	10
							Weak product odor between 10 and 14 ft bgs.	
					PID= 71.7			
					PID= 1840			
15	200		S1	Soil: AB-4-16.5 NWTPH-Gx, -Gx, BTEX, CVOCs			Product odor grades to strong between 14 to 17 ft bgs.	15
					PID= 1635			
				Soil: AB-4-19 NWTPH-Gx, -Gx, BTEX, CVOCs			Grades to gray brown.	
					PID= 42.2			
20	195				PID= 100			20
					PID= 9.1			
25	190		S2	Soil: AB-4-24 NWTPH-Gx, -Gx, BTEX, CVOCs	PID= 6.1		Soil coarsening with depth.	25
					PID= 4.0		Becomes gravelly with weak product odor.	
		▽ 11/8/2016			PID= 0.0		Wet, gray brown, very sandy, silty GRAVEL (GM); fine to coarse sand, fine subrounded gravel, with no odor, no sheen.	
30	185			Soil: AB-4-29 NWTPH-Gx, -Gx, BTEX, CVOCs			Hard, moist, gray, slightly sandy, gravelly SILT (ML); fine sand, fine subrounded gravel, with none to low plasticity, no odor, no sheen.	30
					PID= 3.5			
			S3		PID= 9.9		5-inch cobble at 33 ft bgs.	
35	180				PID= 31			35
							Bottom of exploration at 35 ft. bgs.	

Legend

Sample Method: Continuous core 7"

Water Level: ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: MML
Approved by: DC & ADG

Exploration Log AB-4
Sheet 1 of 1

Aspect CONSULTING	Brooklyn Ave - 160092		Environmental Exploration Log	
	Project Address & Site Specific Location 4700 Brooklyn Ave NE, Seattle, WA, Southwest property corner		*Coordinates (SPN NAD83 ft)* E:1275627 N:245425	*Exploration Number* **AB-5**
Contractor Holt Services	*Equipment* Rotary drill rig	*Sampling Method* Rotary core	*Ground Surface (GS)* *Elev.* 215' (est)	
Operator Dave	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 11/8/2016	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 27' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0	215	Concrete surface seal					Asphalt	0
							Slightly moist, brown, slightly silty SAND (SP-SM); trace fine subrounded gravel, fine to medium sand, with no odor.	
							Vacuumed out from 0 to 5 ft bgs for utilities.	
5	210	Backfilled with bentonite chips	S1	Soil: AB-5-5 NWTPH-Gx, -Dx, BTEX, CVOCs				5
10	205			Soil: AB-5-10 NWTPH-Gx, -Dx, BTEX, CVOCs			Moist, brown SAND (SP); trace silt, fine to medium sand, with no odor.	10
15	200		S2	Soil: AB-5-14 NWTPH-Gx, -Dx, BTEX, CVOCs			Becomes gray brown Moderate product odor.	15
20	195		S3	Soil: AB-5-19 NWTPH-Gx, -Dx, BTEX, CVOCs				20
25	190	▽ 11/8/2016		Soil: AB-5-24 NWTPH-Gx, -Dx, BTEX, CVOCs	PID= 41.2		No product odor.	25
			S4				Wet, gray, gravelly, slightly silty SAND (SP-SM); fine to medium sand, fine subrounded gravel, with no odor, no sheen.	
30	185			Soil: AB-5-29 NWTPH-Gx, -Dx, BTEX, CVOCs			Moist, gray brown, gravelly, silty SAND (SM); fine subrounded grave, fine to medium sand, with diamict fabric, no odor, no sheen.	30
			S5	Soil: AB-5-32 NWTPH-Gx, -Dx, BTEX, CVOCs			Hard, moist, gray, slightly sandy SILT (ML); fine sand, with no odor, no sheen, none to low plasticity.	
35	180						Bottom of exploration at 35 ft. bgs. Note: PID malfunction, measurements not made.	35

Legend

Sample Method: Continuous core 7"

Water Level: ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: MML
Approved by: DC & ADG

Exploration Log AB-5
Sheet 1 of 1

Aspect CONSULTING	Brooklyn Ave - 160092		Environmental Exploration Log	
	Project Address & Site Specific Location 4700 Brooklyn Ave NE, Seattle, WA, Southwest property corner		*Coordinates (SPN NAD83 ft)* E:1275591 N:245538	*Exploration Number* **AB-6**
Contractor Holt Services	*Equipment* Rotary drill rig	*Sampling Method* Rotary core	*Ground Surface (GS)* *Elev.* 215' (est)	
Operator Dave	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 11/9/2016	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 21' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0	215	Concrete surface seal					Asphalt	0
							Moist, brown, gravelly, slightly silty SAND (SP-SM); fine to medium sand, fine subrounded gravel, with no odor. Vacuumed out from 0 to 6 ft bgs for utilities.	
		Backfilled with bentonite chips	S1	Soil: AB-6-8 NWTPH-Gx, -Dx, BTEX	PID= 27.8			
5	210				PID= 0.0			5
10	205			Soil: AB-6-13 NWTPH-Gx, -Dx, BTEX	PID= 0.0		Moist, brown SAND (SP); fine to medium sand, with no odor.	10
			S2				Weak product odor.	
15	200				PID= 21.7			15
				Soil: AB-6-17 NWTPH-Gx, -Dx, BTEX, Select VOCs, Pb	PID= 1043		Grades to gray with a strong product odor.	
					PID= 68.2		Becomes slightly silty SAND (SP-SM);	
20	195	▽ 11/9/2016			PID= 11.8		Wet, gray, sandy, silty GRAVEL (GM); fine to coarse sand, fine to coarse subrounded gravel, weak product odor.	20
					PID= 2.5		Moist to wet, gray, slightly silty SAND (SP-SM); fine to medium sand, with very weak product odor.	
25	190		S3	Soil: AB-6-24 NWTPH-Gx, -Dx, BTEX	PID= 0.3		No product odor.	25
							Becomes silty SAND (SM)	
				Soil: AB-6-29 NWTPH-Gx, -Dx, BTEX	PID= 0.0			
30	185				PID= 0.0			30
			S4	Soil: AB-6-33 NWTPH-Gx, -Dx, BTEX	PID= 0.0		Hard, moist, gray, slightly sandy SILT (ML); fine sand, with none to low plasticity, no odor.	
35	180						Bottom of exploration at 33 ft. bgs.	35

Legend

Sample Method: Continuous core 4" ID

Water Level: ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: MML
Approved by: DC & ADG

Exploration Log AB-6
Sheet 1 of 1

Aspect CONSULTING	Brooklyn Ave - 160092		Environmental Exploration Log	
	Project Address & Site Specific Location 4700 Brooklyn Ave NE, Seattle, WA, West property line		*Coordinates (SPN NAD83 ft)* E:1275559 N:245534	*Exploration Number* **AB-7**
Contractor Holt Services	*Equipment* Rotary drill rig	*Sampling Method* Rotary core	*Ground Surface (GS)* *Elev.* 215' (est)	
Operator Dave	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 11/9/2016	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 27' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0	215	Concrete surface seal					Asphalt	0
							Moist, brown, gravelly, slightly silty SAND (SP-SM); fine to medium sand, fine subrounded gravel, no odor.	
5	210	Backfilled with bentonite chips	S1	Soil: AB-7-6 NWTPH-Gx, -Dx, BTEX	PID= 0.0			5
10	205			Soil: AB-7-10 NWTPH-Gx, -Dx, BTEX	PID= 0.0		Moist, brown SAND (SP); fine to medium sand, with no odor.	10
					PID= 28.7		Becomes gray with weak product odor.	
15	200		S2	Soil: AB-7-14 NWTPH-Gx, -Dx, BTEX	PID= 550		Product odor becomes moderate.	15
					PID= 232		Product odor becomes strong.	
20	195			Soil: AB-7-19 NWTPH-Gx, -Dx, BTEX	PID= 1656		Product odor becomes very strong.	20
							Woodchips between 20 and 21 ft bgs.	
					PID= 42.0			
25	190	▽ 11/9/2016	S3	Soil: AB-7-24 NWTPH-Gx, -Dx, BTEX	PID= 29.6		Becomes gravelly with fine subrounded gravel.	25
					PID= 25.1		Wet, gray brown, gravelly, slightly silty SAND (SP-SM); fine to coarse sand, fine subrounded gravel, with moderate product odor, grading siltier with depth.	
30	185			Soil: AB-7-29 NWTPH-Gx, -Dx, BTEX	PID= 25.1		Becomes slightly moist, with weak product odor.	30
			S4		PID= 9.3		Hard, moist, gray, slightly sandy SILT (ML); fine sand, with none to low plasticity, no odor.	
35	180			Soil: AB-7-33 NWTPH-Gx, -Dx, BTEX	PID= 8.9		Bottom of exploration at 33 ft. bgs.	35

Legend

Sample Method: Continuous core 4" ID

Water Level: ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: MML
Approved by: DC & ADG

Exploration Log AB-7
Sheet 1 of 1

Aspect CONSULTING	Brooklyn Ave - 160092		Environmental Exploration Log	
	Project Address & Site Specific Location 4700 Brooklyn Ave NE, Seattle, WA, North of fueling islands		*Coordinates (SPN NAD83 ft)* E:1275582 N:245484	*Exploration Number* **AB-8**
Contractor Holt Services	*Equipment* Rotary drill rig	*Sampling Method* Rotary core	*Ground Surface (GS)* *Elev.* 215' (est)	
Operator Dave	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 11/9/2016	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 25' (ATD)

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0	215	Concrete surface seal					Asphalt	0
							Moist, brown SAND (SP); fine to medium sand, no odor.	
							Vacuumed out from 0 to 6 ft bgs for utilities.	
		Backfilled with bentonite chips						
5	210		S1	Soil: AB-8-6 NWTPH-Gx, -Dx, BTEX	PID= 4.8			5
10	205			Soil: AB-8-10 NWTPH-Gx, -Dx, BTEX	PID= 39.7			10
					PID= 28.8			
15	200		S2	Soil: AB-8-14 NWTPH-Gx, -Dx, BTEX	PID= 32.6		Becomes gray brown, with a very weak product odor.	15
					PID= 39.5			
				Soil: AB-8-18 NWTPH-Gx, -Dx, BTEX	PID= 18.6			
20	195						No product odor.	20
					PID= 22.5			
25	190	▽ 11/9/2016	S3	Soil: AB-8-24 NWTPH-Gx, -Dx, BTEX	PID= 17.1		Wet, brown, silty GRAVEL (GM); fine to coarse sand, fine to coarse subrounded gravel, with no odor.	25
				Soil: AB-8-29 NWTPH-Gx, -Dx, BTEX	PID= 25.4		Wet, gray, gravelly, silty SAND (SM); fine to coarse sand, fine to coarse subrounded gravel, with no odor.	
30	185				PID= 10.8		Hard, moist, gray, slightly sandy SILT (ML); fine sand, with none to low plasticity, no odor.	30
			S4	Soil: AB-8-33 NWTPH-Gx, -Dx, BTEX	PID= 12.4			
35	180						Bottom of exploration at 35 ft. bgs.	35

Legend

Sample Method
- ◯ No Soil Sample Recovery
- ▮▮ Continuous core 4" ID

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: MML
Approved by: DC & ADG

Exploration Log AB-8
Sheet 1 of 1

Aspect CONSULTING	Brooklyn Ave - 160092		Environmental Exploration Log	
	Project Address & Site Specific Location 4700 Brooklyn Ave NE, Seattle, WA, East property line		*Coordinates (SPN NAD83 ft)* E:1275650 N:245454	*Exploration Number* **AB-9**
Contractor Holt Services	*Equipment* Rotary drill rig	*Sampling Method* Rotary core	*Ground Surface (GS)* *Elev.* 215' (est)	
Operator Dave	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 11/7/2016	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* Not Measured

Depth (feet)	Elev. (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0	215	Concrete surface seal			PID= 36.6		Asphalt Moist, gray brown, slightly gravelly, slightly silty SAND (SP-SM); fine to medium sand, fine subrounded gravel, weak product odor. Becomes brown with no product odor.	0
5	210	Backfilled with bentonite chips	S1	Soil: AB-9-5 NWTPH-Gx, -Dx, BTEX	PID= 76.1 PID= 106			5
10	205			Soil: AB-9-8 NWTPH-Gx, -Dx, BTEX	PID= 46.1		Moist, brown SAND (SP); fine to medium sand, with no odor, no sheen.	10
15	200		S2	Soil: AB-9-14 NWTPH-Gx, -Dx, BTEX	PID= 59.2 PID= 72.9 PID= 317		Becomes gray with weak product odor.	15
20	195		S3	Soil: AB-9-19 NWTPH-Gx, -Dx, BTEX	PID= 472		Becomes slightly gravelly with fine subrounded gravel, and scattered very thin beds of silty sand. Sand coarsening with depth.	20
25	190			Soil: AB-9-24 NWTPH-Gx, -Dx, BTEX	PID= 79.1 PID= 36.1		Becomes gravelly with fine to coarse subrounded gravel. Moist, gray, sandy, silty GRAVEL (GM); fine to medium sand, fine subrounded gravel, with no odor.	25
30	185		S4	Soil: AB-9-27 NWTPH-Gx, -Dx, BTEX	PID= 24.3		Hard, moist, gray, slightly sandy, slightly gravelly, SILT (ML); fine sand, fine subrounded gravel, with none to low plasticity, no odor, no sheen. Bottom of exploration at 30 ft. bgs. Note: PID malfunction, measurements likely overstated.	30
35	180							35

Legend

Sample Method
- ◯ No Soil Sample Recovery
- ◧ Continuous core 5"

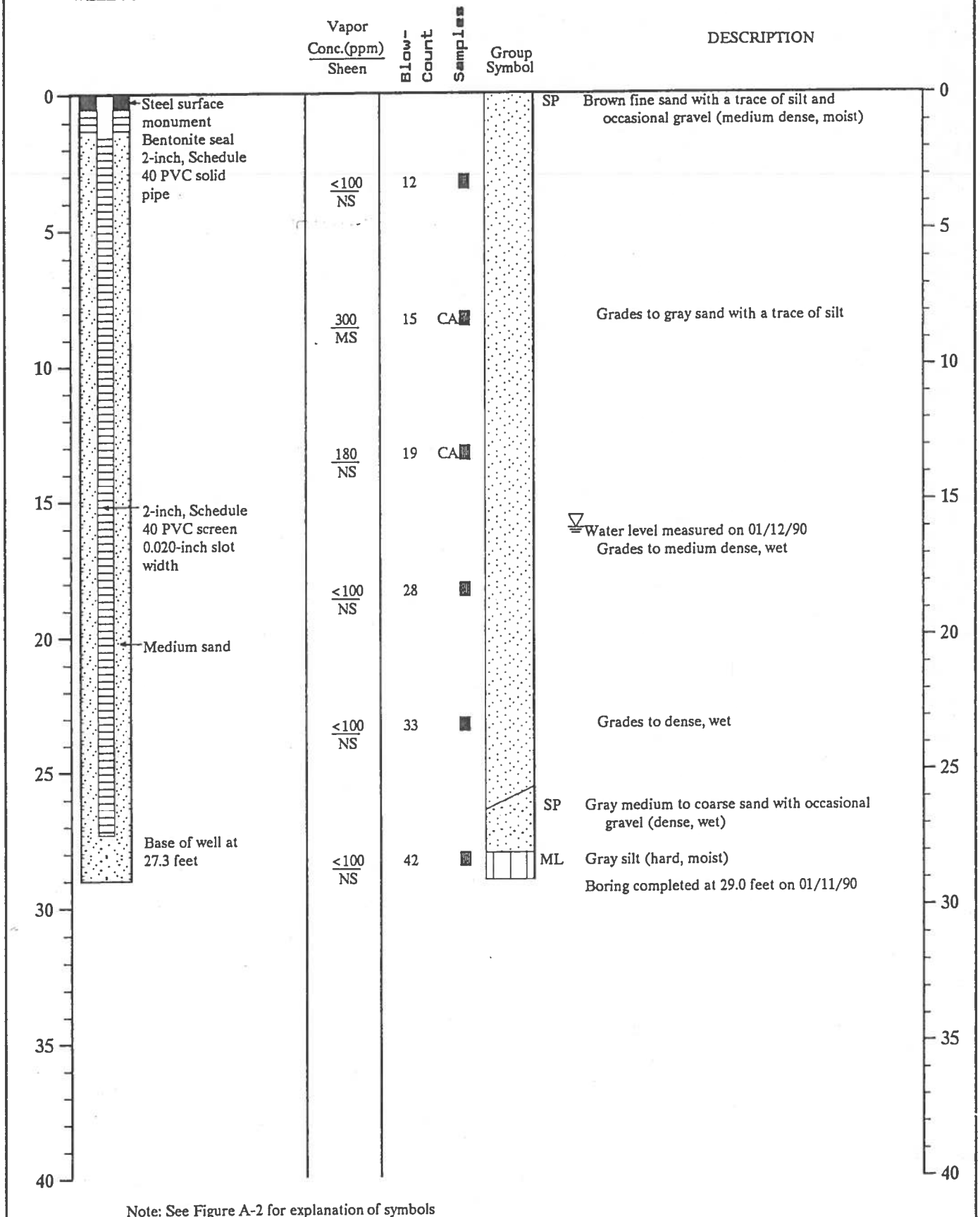
Water Level: Not Measured

See Exploration Log Key for explanation of symbols

Logged by: MML
Approved by: DC & ADG

Exploration Log AB-9
Sheet 1 of 1

MONITOR WELL NO. MW-1



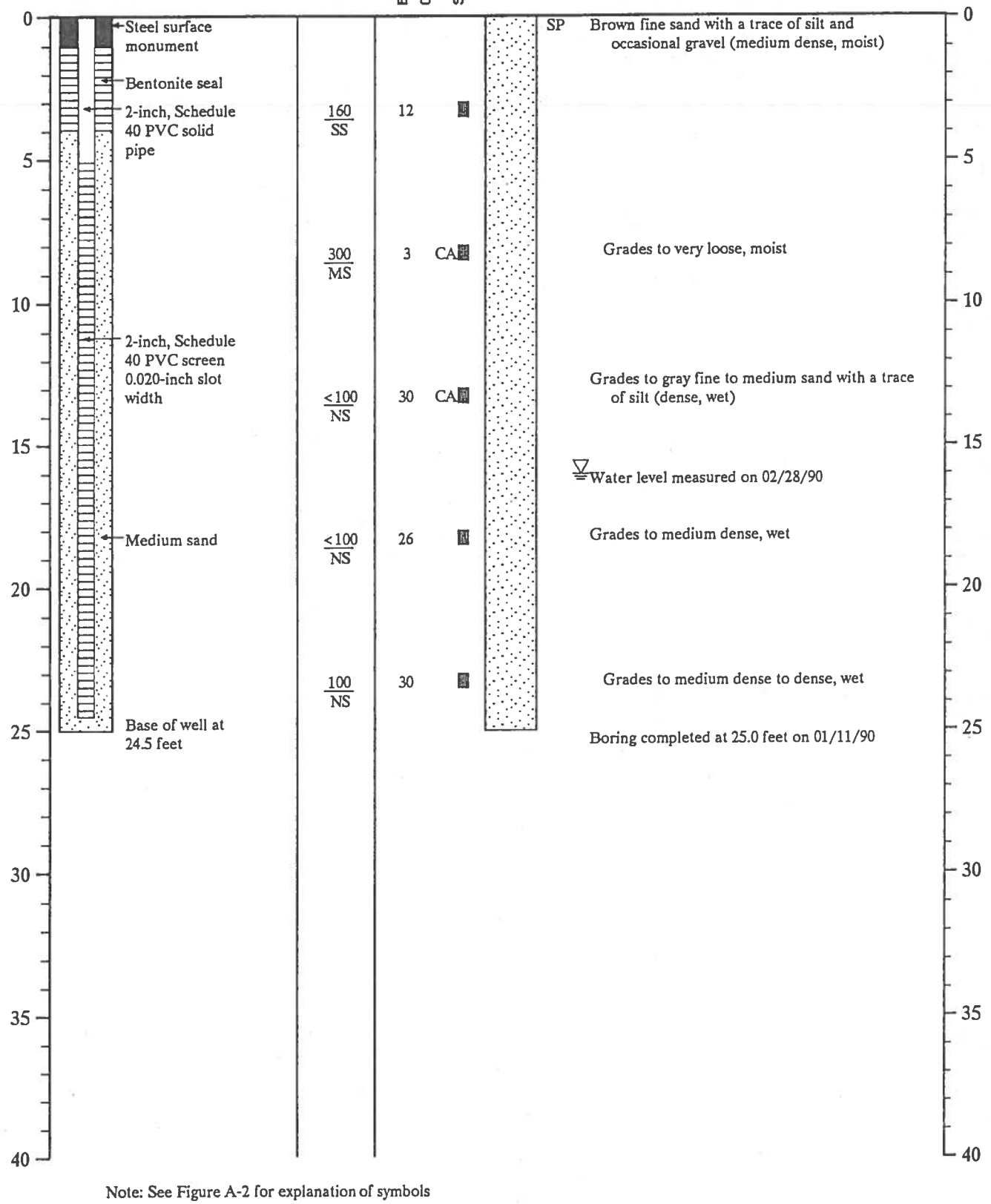
Note: See Figure A-2 for explanation of symbols

GeoEngineers

Log of Monitor Well

Figure A-3

MONITOR WELL NO. MW-2



Note: See Figure A-2 for explanation of symbols

Geo Engineers

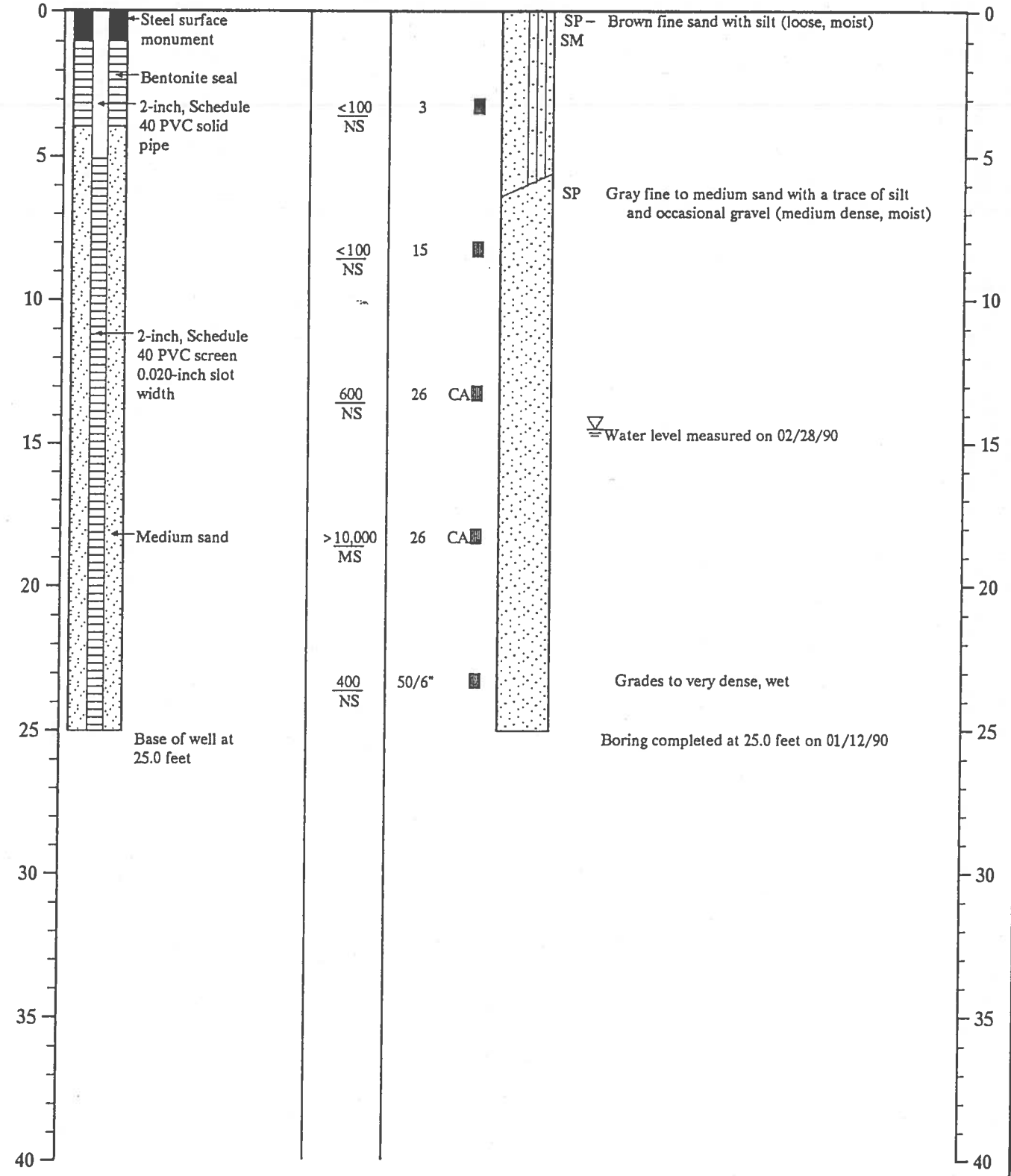
Log of Monitor Well

Figure A-4

:LRM:CLH:IRA 6/13/90

0372-068-B04

MONITOR WELL NO. MW-3



Note: See Figure A-2 for explanation of symbols

Geo Engineers

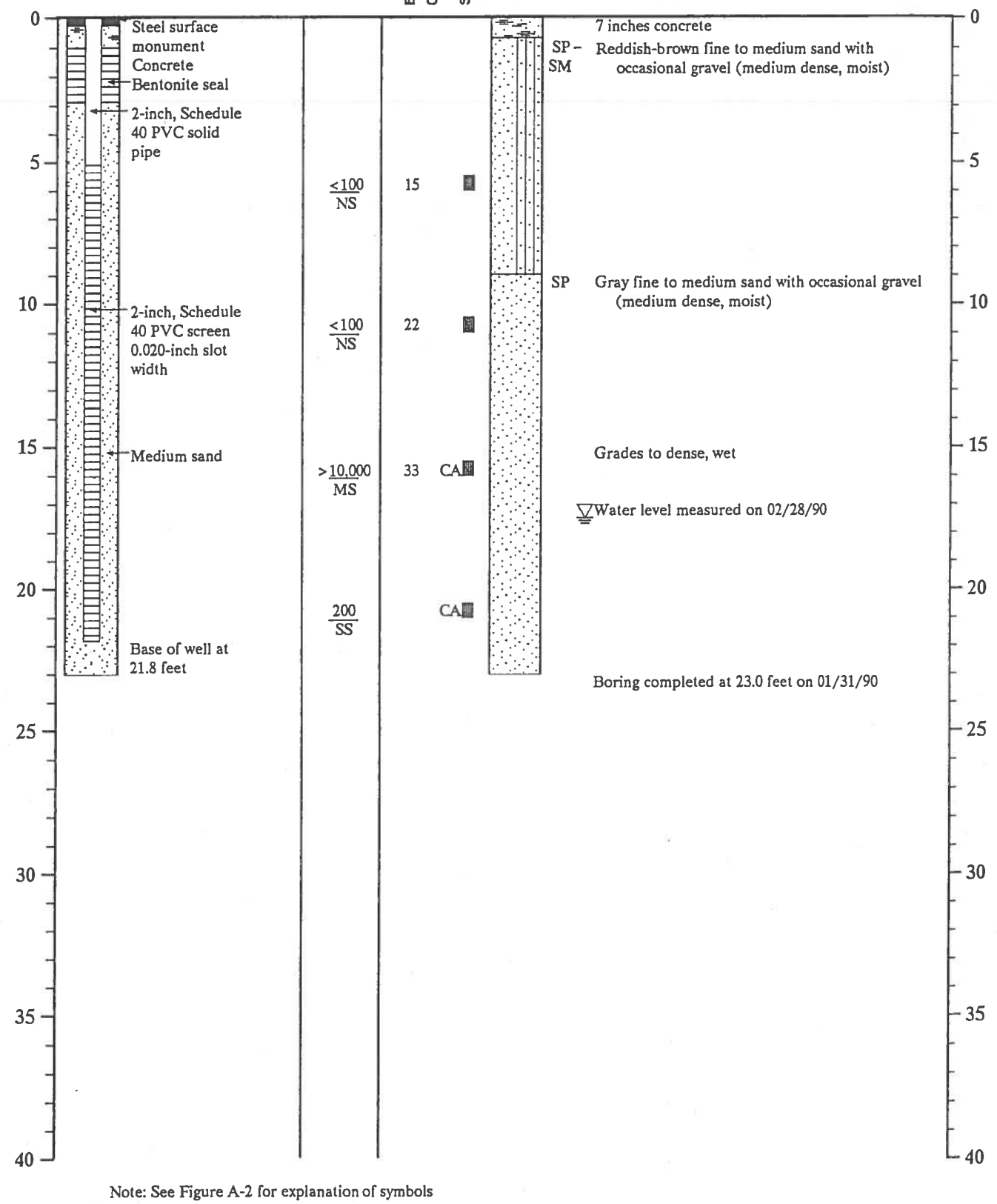
Log of Monitor Well

Figure A-5

:LRM:CLH:IRA 6/13/90

0372-068-B04

MONITOR WELL NO. MW-4



Note: See Figure A-2 for explanation of symbols

Geo Engineers

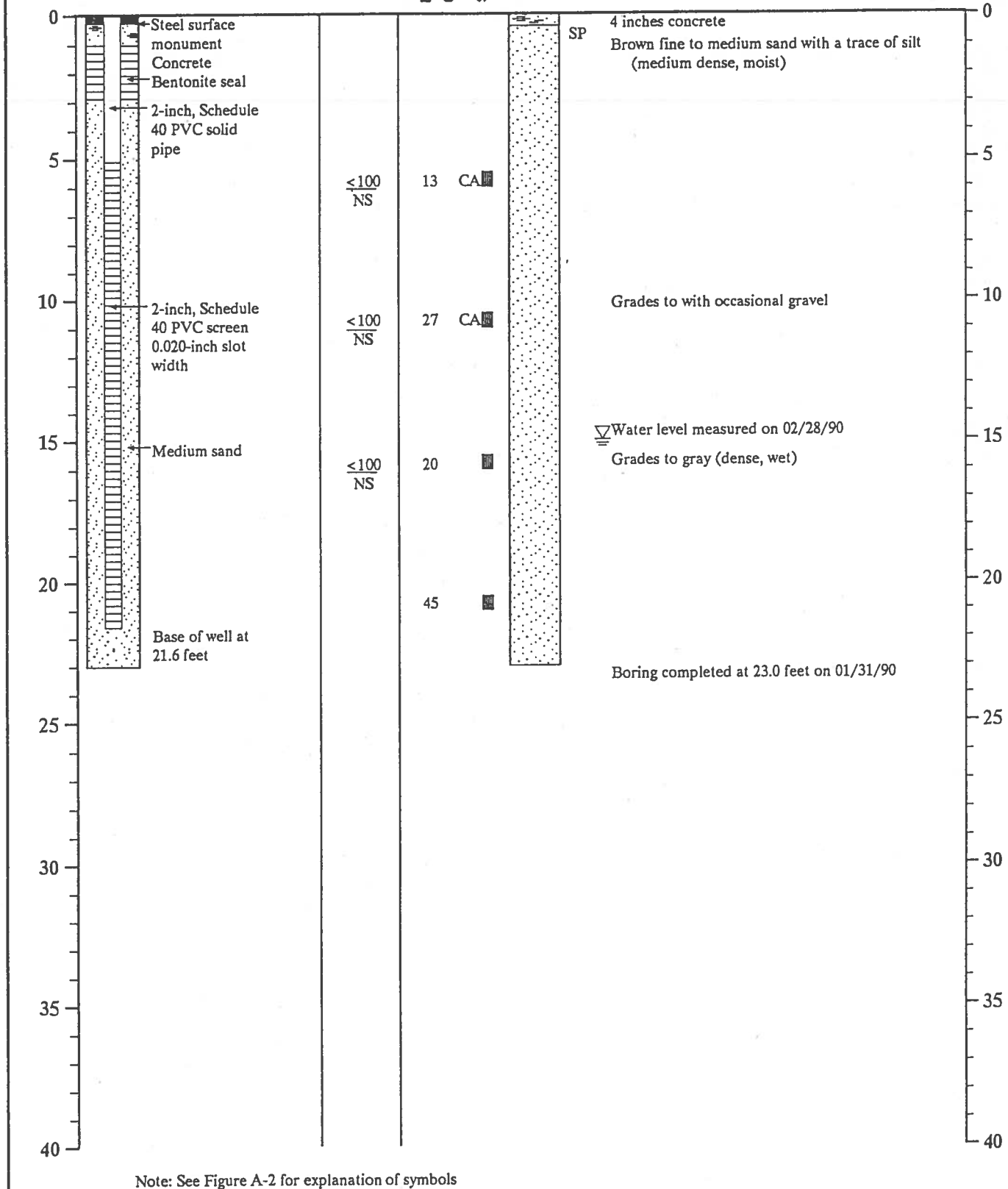
Log of Monitor Well

Figure A-6

:LRM:CLH:IRA 6/13/90

0372-068-B04

MONITOR WELL NO. MW-5



Note: See Figure A-2 for explanation of symbols

Geo Engineers

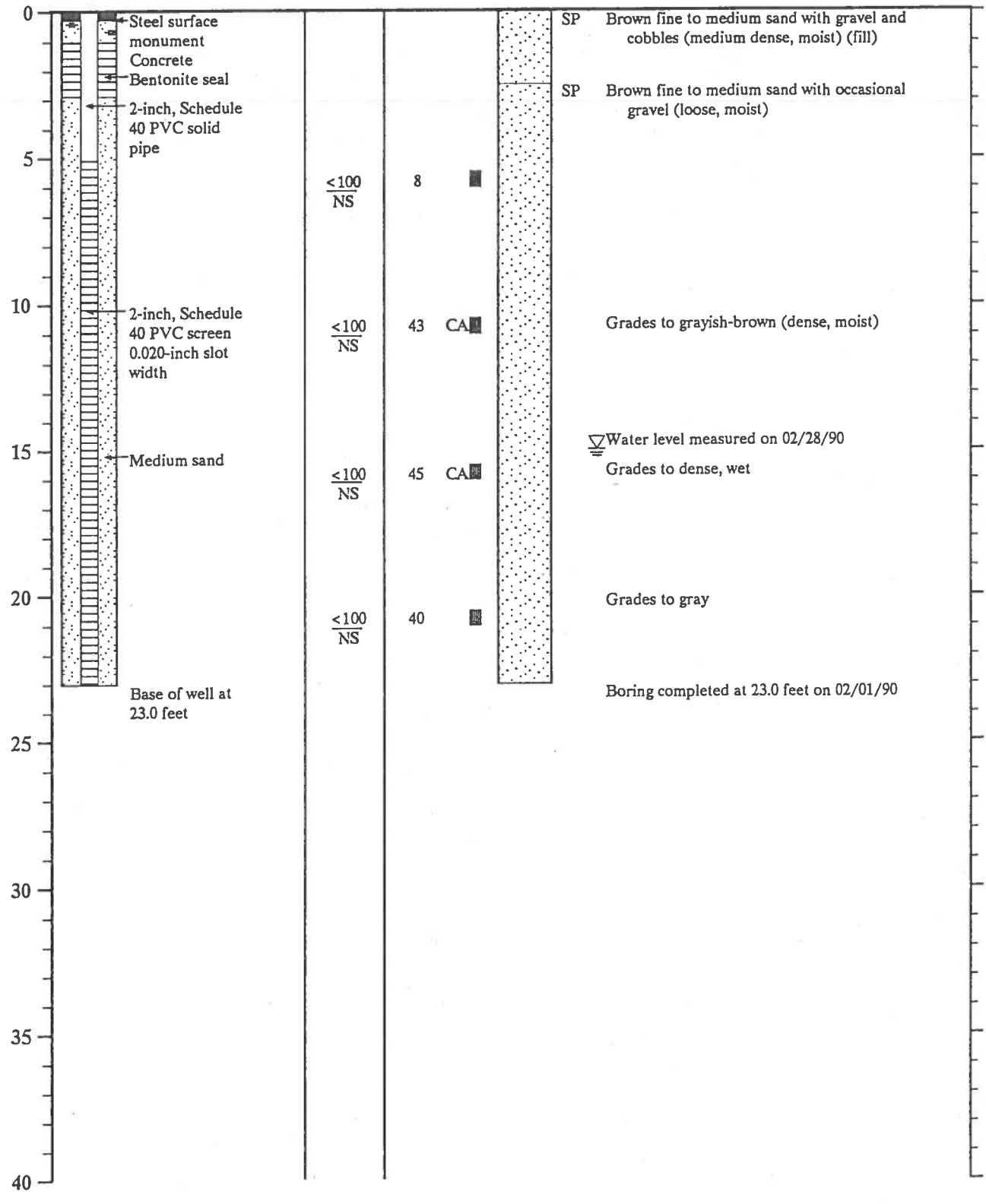
Log of Monitor Well

Figure A-7

:LRM:CLH:IRA 6/13/90

0372-068-B04

MONITOR WELL NO. MW-6



Note: See Figure A-2 for explanation of symbols

Geo Engineers

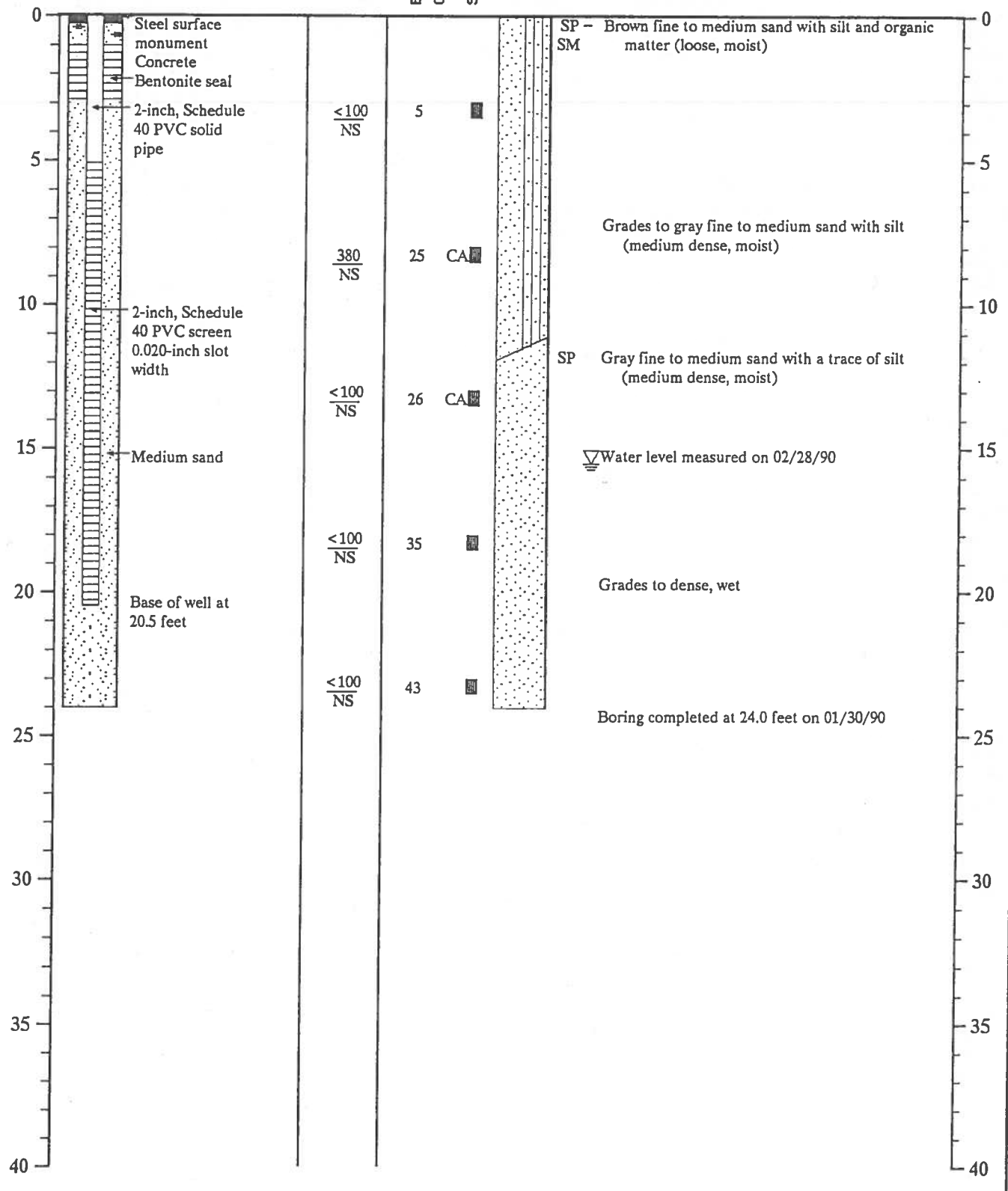
Log of Monitor Well

Figure A-8

:LRM:CLH:IRA 6/15/90

0372-068-B04

MONITOR WELL NO. MW-7



Note: See Figure A-2 for explanation of symbols

Geo Engineers

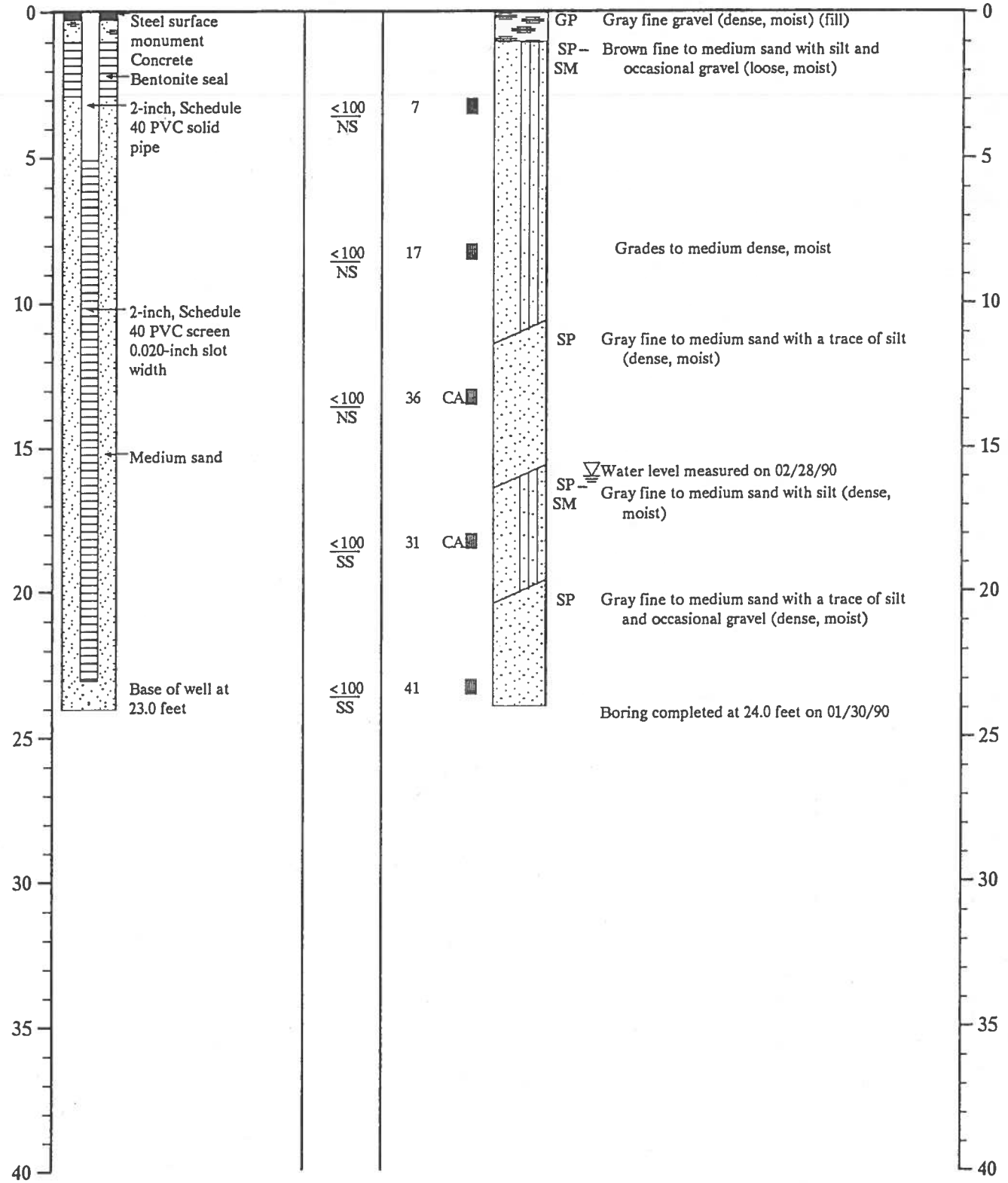
Log of Monitor Well

Figure A-9

:LRM:CLH:IRA 6/13/90

0372-068-B04

MONITOR WELL NO. MW-8



Note: See Figure A-2 for explanation of symbols

Geo Engineers

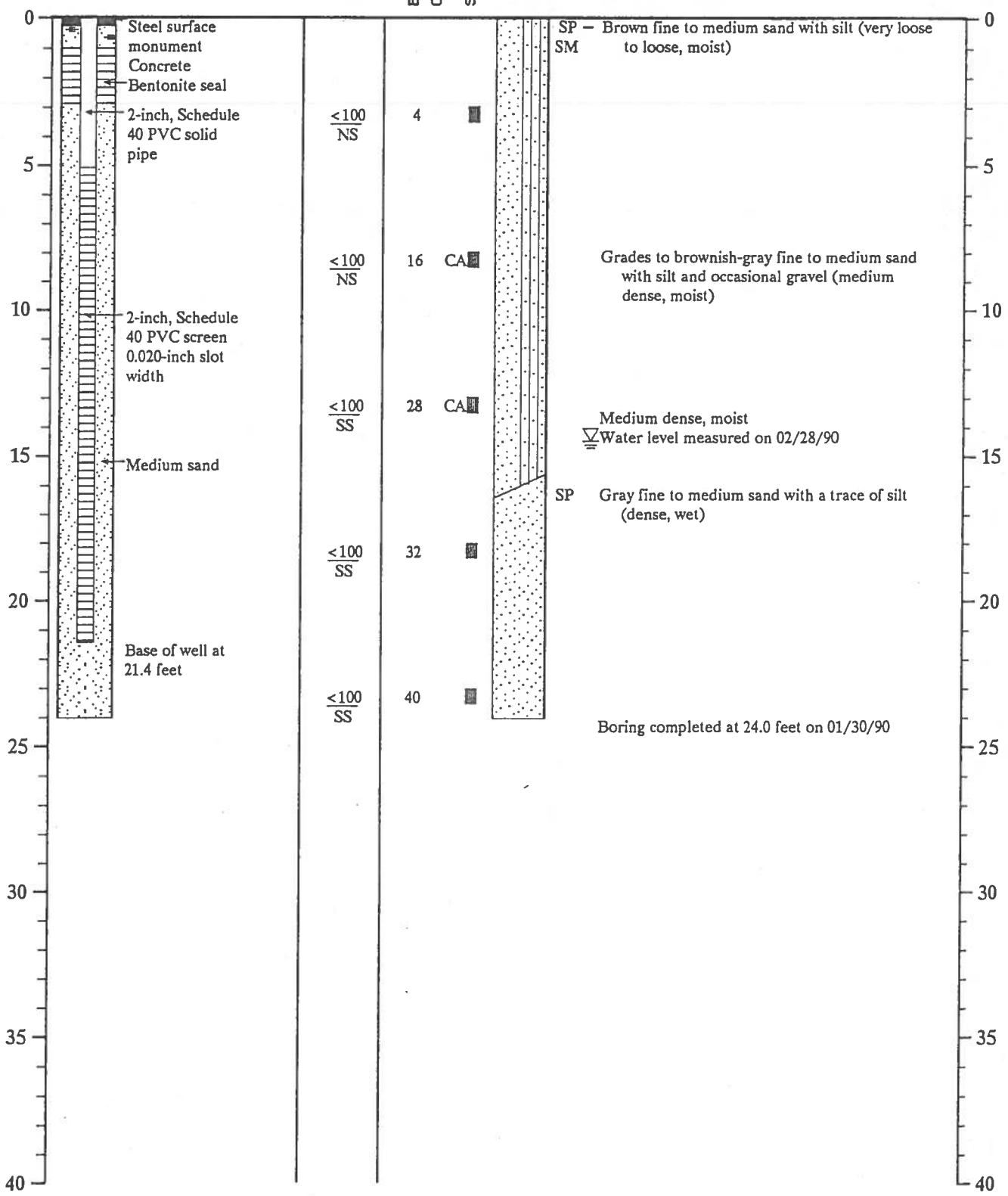
Log of Monitor Well

Figure A-10

:LRM:CLH:IRA 6/13/90

0372-068-B04

MONITOR WELL NO. MW-9



Note: See Figure A-2 for explanation of symbols

Geo Engineers

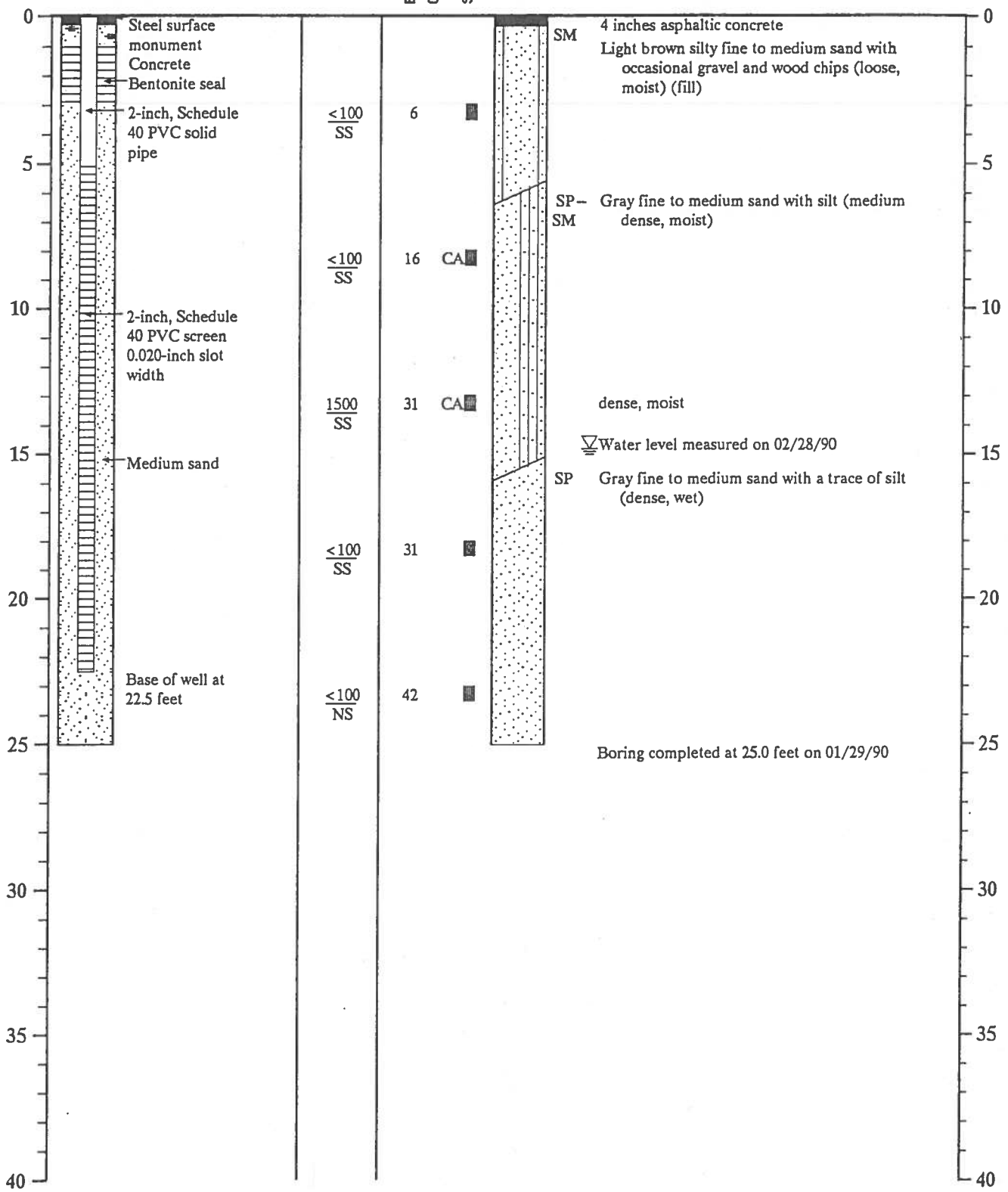
Log of Monitor Well

Figure A-11

:LRM:CLH:IRA 6/13/90

0372-068-B04

MONITOR WELL NO. MW-10



Note: See Figure A-2 for explanation of symbols

GeoEngineers

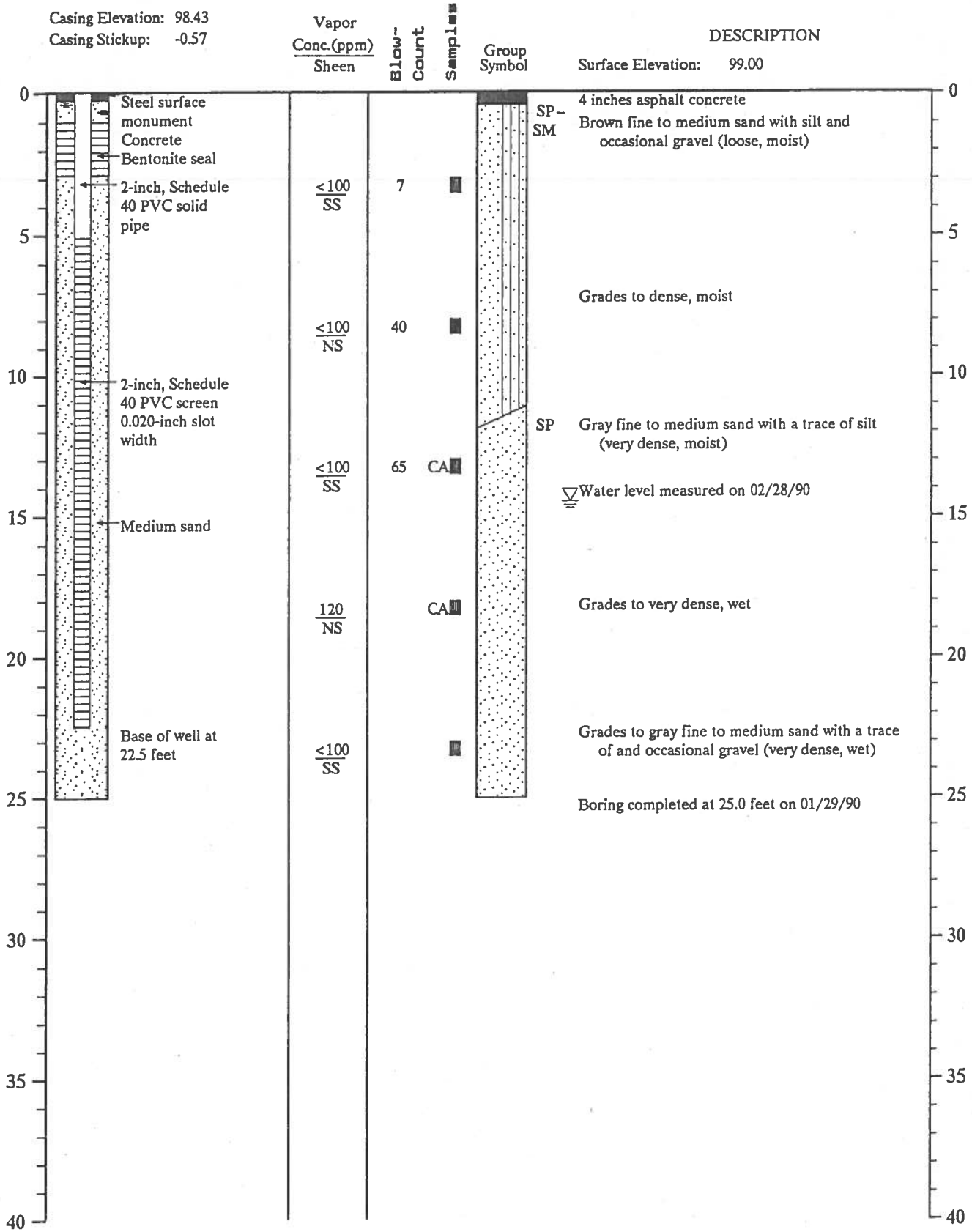
Log of Monitor Well

Figure A-12

:LRM:CLH:IRA 6/15/90

0372-068-B04

MONITOR WELL NO. MW-11



Note: See Figure A-2 for explanation of symbols

Geo Engineers

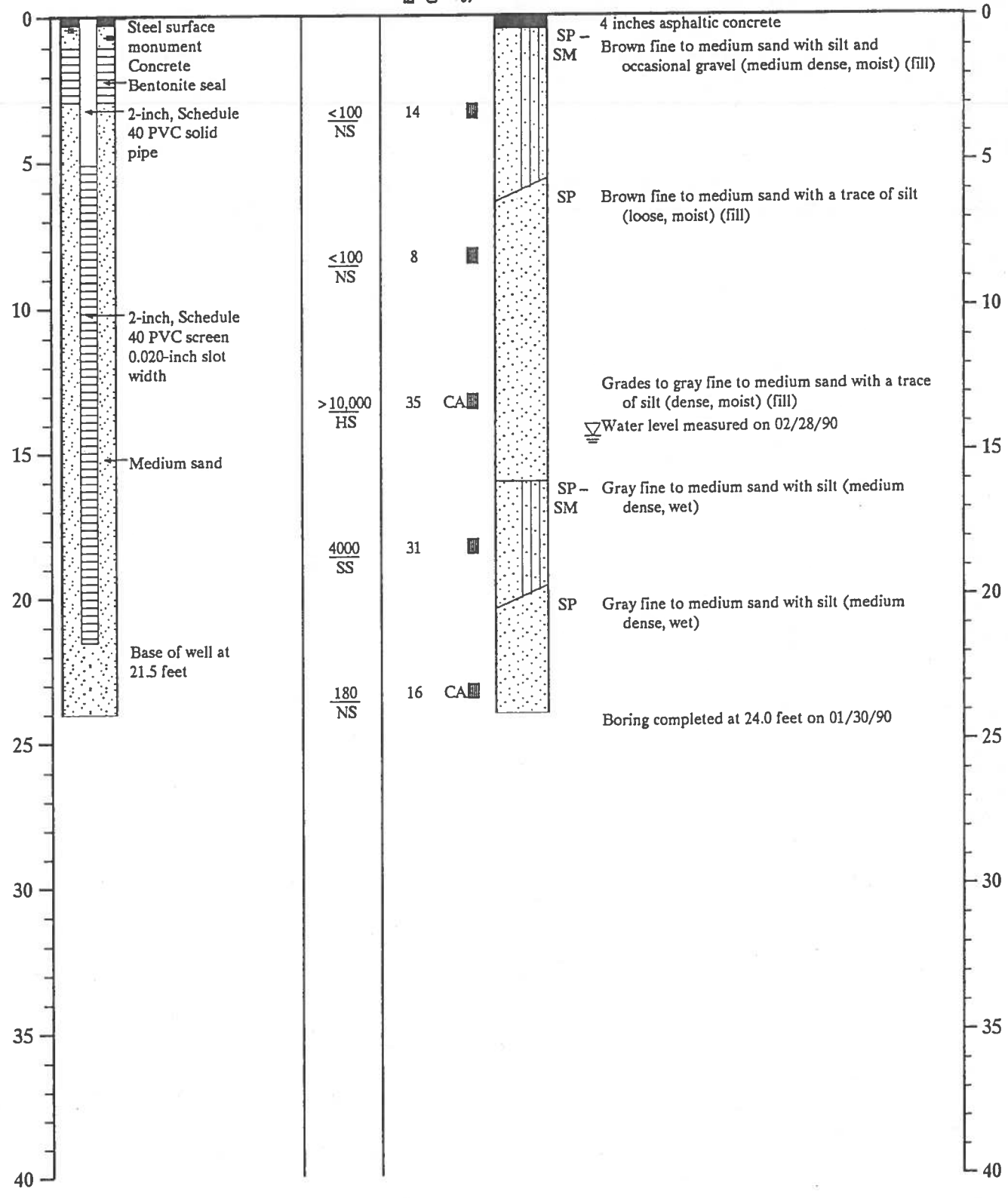
Log of Monitor Well

Figure A-13

:LRM:CLH:IRA 6/15/90

0372-068-B04

MONITOR WELL NO. MW-12



Note: See Figure A-2 for explanation of symbols

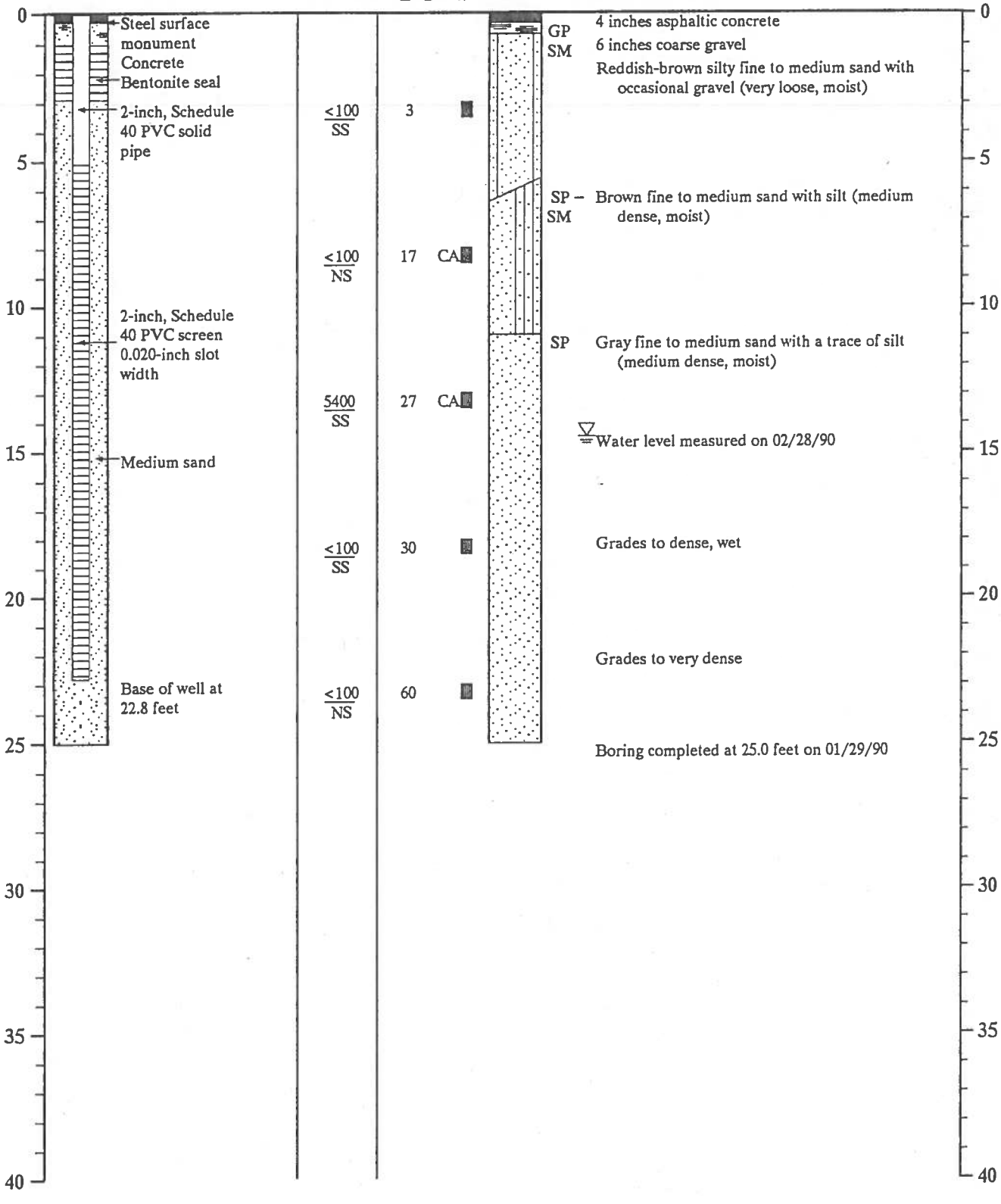
Geo Engineers

Log of Monitor Well

Figure A-14

0372-068-B04 :LRM:CLH:IRA 6/13/90

MONITOR WELL NO. MW-13



Note: See Figure A-2 for explanation of symbols

Geo Engineers

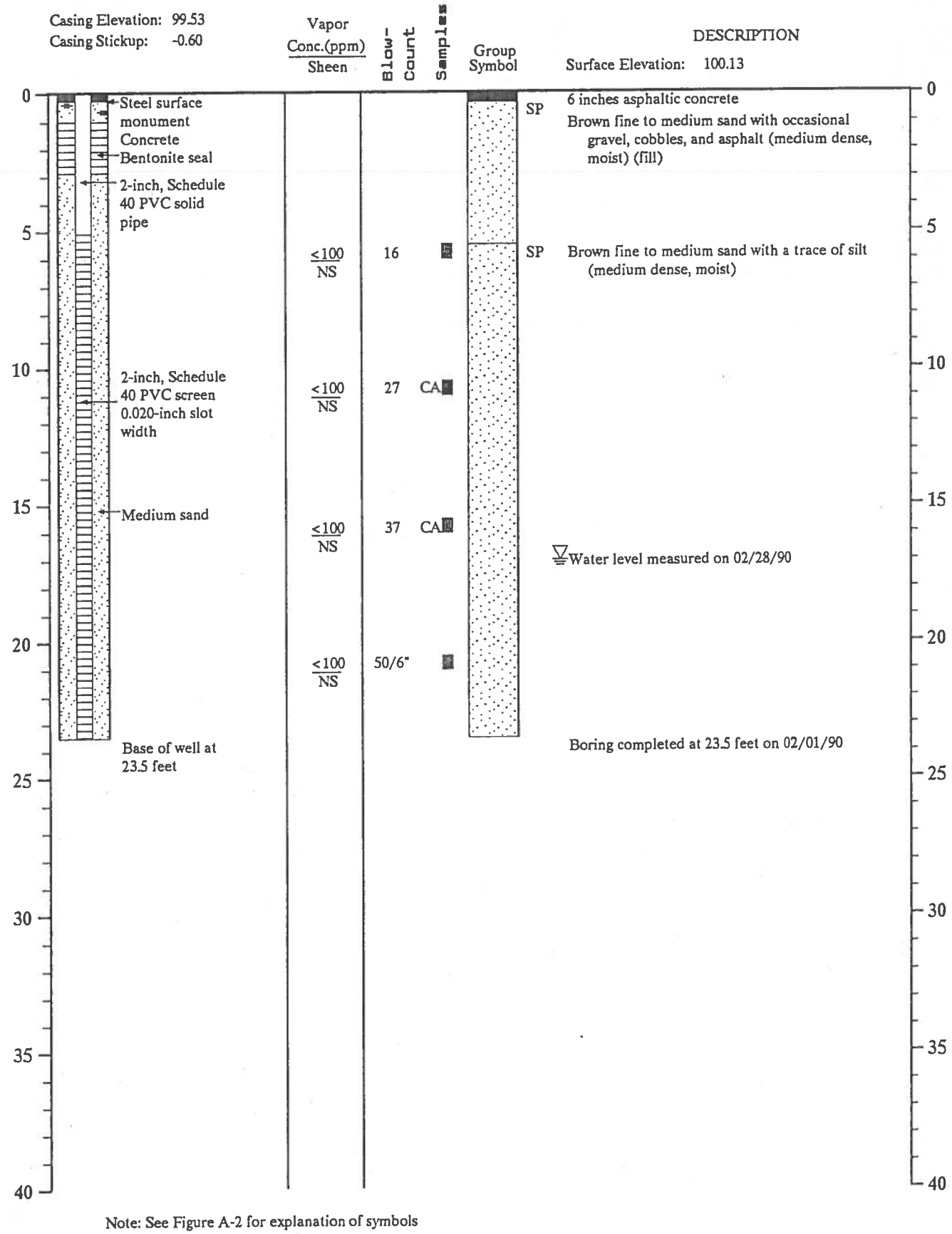
Log of Monitor Well

Figure A-15

:LRM:CLH:IRA 6/13/90

0372-068-B04

MONITOR WELL NO. MW-14



Note: See Figure A-2 for explanation of symbols

Geo Engineers

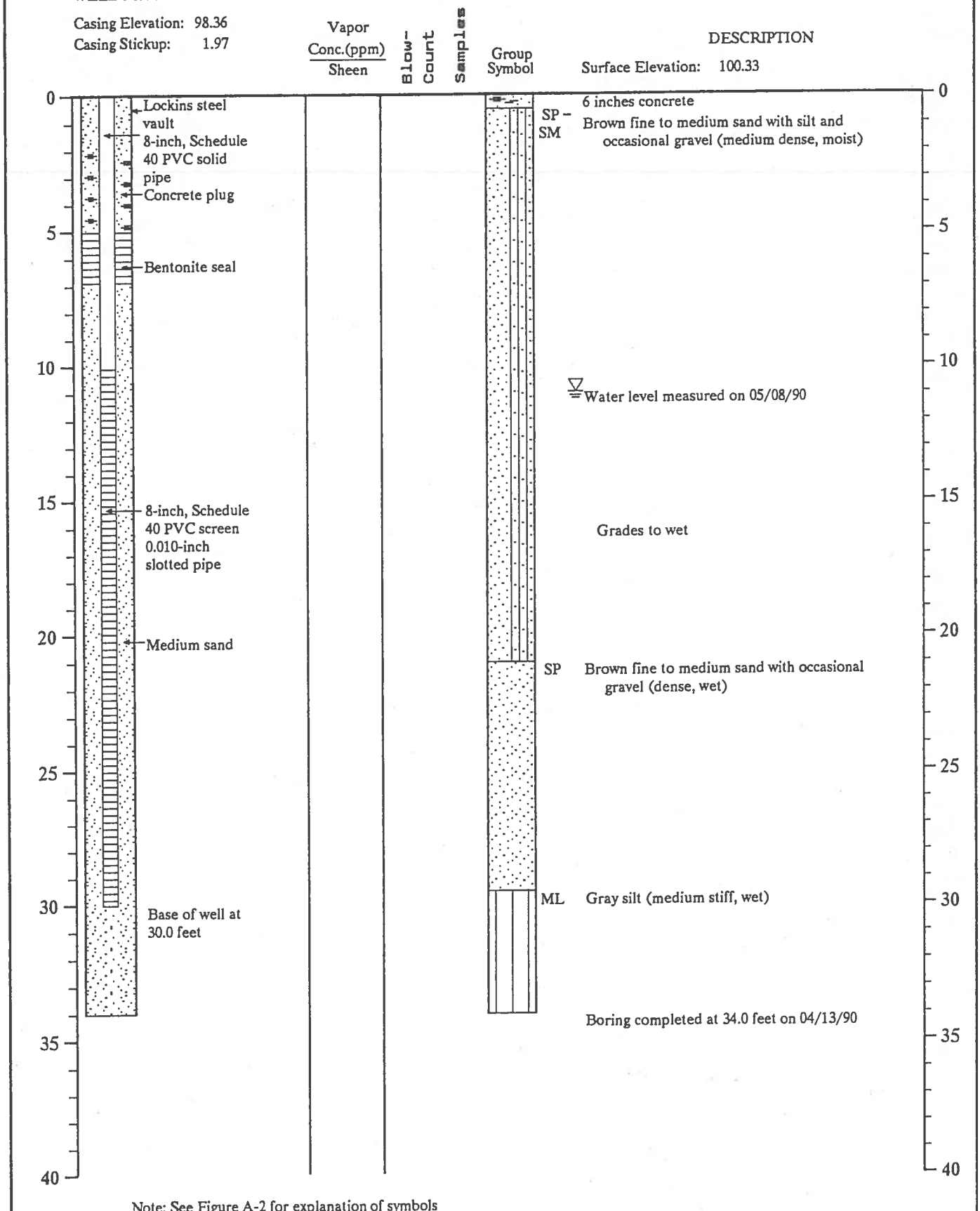
Log of Monitor Well

Figure A-16

:LRM:CLH:IRA 6/13/90

0372-068-B04

RECOVERY WELL NO. RW-1



Note: See Figure A-2 for explanation of symbols

Geo Engineers

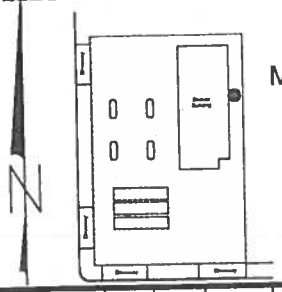
Log of Recovery Well

Figure A-17

:LRM:CLH:IRA 6/15/90

0372-068-B04

WELL/BORING LOCATION MAP



Delta Environmental Consultants, Inc.

WELL/BORING: MW-15

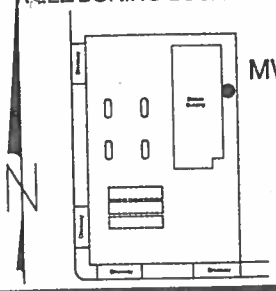
DATE:3/8/2001	DRILLING METHOD: Hollow Stem Auger
PROJECT: CW 90129	SAMPLING METHOD: DM Split Spoon
CLIENT: Chevron 90129	BORING DIAMETER: 8"
LOCATION: 4700 Brooklyn Avenue	BORING DEPTH: 25.5'
CITY: Seattle	WELL CASING: 2" SCH 40 PVC
STATE: WA.	WELL SCREEN: 10-25' (0.020")
DRILLER: Cascade	SAND PACK: 8-25.5' (#2/12)

CASING ELEVATION	99.09
DATE:	3/8/2001
TIME:	

DESCRIPTION/LOGGED BY: Shawn Madison

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION
Concrete / Bentonite / Sand			DP	0	27 38 39	5–6			SM		SILTY SAND: brown; 10% fines; fine to medium sand; very dense; no odor
			DP	0	24 26 29	10–11			SM		SILTY SAND: grayish brown; 20% fines; fine to medium sand; dense; no odor
		▼	DP	0	50/6	15–16			SM		SILTY SAND: gray; 10% fines; fine to medium sand; very dense; no odor
	▽		WT	0	80/6 50/4	20–21			SM		SILTY SAND: gray; 10% fines; fine to medium sand; very dense; no odor

WELL/BORING LOCATION MAP



Delta Environmental Consultants, Inc.

WELL/BORING: MW-15

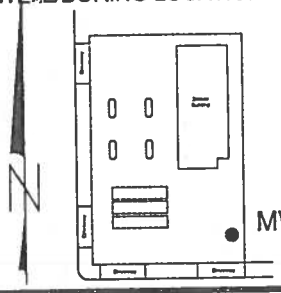
DATE:3/8/2001	DRILLING METHOD: Hollow Stem Auger
PROJECT: CW 90129	SAMPLING METHOD: DM Split Spoon
CLIENT: Chevron 90129	BORING DIAMETER: 8"
LOCATION: 4700 Brooklyn Avenue	BORING DEPTH: 25.5'
CITY: Seattle	WELL CASING: 2" SCH 40 PVC
STATE: WA.	WELL SCREEN: 10-25' (0.020")
DRILLER: Cascade	SAND PACK: 8-25.5' (#2/12)

CASING ELEVATION	99.09
DATE:	3/8/2001
TIME:	

DESCRIPTION/LOGGED BY: Shawn Madison

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	
Sand			WT	0	50/6	23			GM		SILTY GRAVEL: gray; 25% silt; 10% fine to medium sand; gravel; very dense; no odor
						24					
						25					
						26					
						27					
						28					
						29					
						30					
						31					
						32					
						33					
						34					
						35					
						36					
						37					
						38					
						39					
						40					
						41					
						42					
						43					
						44					

WELL/BORING LOCATION MAP



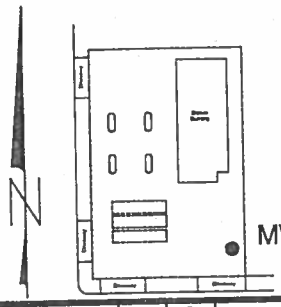
Delta Environmental Consultants, Inc.	WELL/BORING: MW-16
DATE:3/8/2001	DRILLING METHOD: Hollow Stem Auger
PROJECT: CW 90129	SAMPLING METHOD: DM Split Spoon
CLIENT: Chevron 90129	BORING DIAMETER: 8"
LOCATION: 4700 Brooklyn Avenue	BORING DEPTH: 25.5'
CITY: Seattle	WELL CASING: 2" SCH 40 PVC
STATE: WA.	WELL SCREEN: 10-25' (0.020")
DRILLER: Cascade	SAND PACK: 8-25.5' (#2/12)

CASING ELEVATION	97.67
DATE:	3/8/2001
TIME:	

DESCRIPTION/LOGGED BY: Shawn Madison

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION
Concrete / Bentonite / Sand				0	8 8 10	5–6			SM		SILTY SAND: light brown; 10% fines; fine to medium sand; medium dense; no odor
				0	27 31 40	10–11			SM		SILTY SAND: gray; 20% fines; fine to medium sand; very dense; no odor
		▼		0	23 30	15–16			SM		SILTY SAND: gray; 20% fines; fine sand; very dense; no odor
				0	36 30	20–21			SM		SILTY SAND: gray; 20% fines; fine sand; very dense; no odor

WELL/BORING LOCATION MAP



Delta Environmental Consultants, Inc.

WELL/BORING: MW-16

DATE: 3/8/2001	DRILLING METHOD: Hollow Stem Auger
PROJECT: CW 90129	SAMPLING METHOD: DM Split Spoon
CLIENT: Chevron 90129	BORING DIAMETER: 8"
LOCATION: 4700 Brooklyn Avenue	BORING DEPTH: 25.5'
CITY: Seattle	WELL CASING: 2" SCH 40 PVC
STATE: WA.	WELL SCREEN: 10-25' (0.020")
DRILLER: Cascade	SAND PACK: 8-25.5' (#2/12)

CASING ELEVATION	97.67
DATE:	3/8/2001
TIME:	

DESCRIPTION/LOGGED BY:

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION/LOGGED BY:
Sand						23					
						24			SM		
			DP	0	50/6	25			ML		INORGANIC SILT: gray; fines; 20% very fine to fine sand; low placticity; very dense; no odor
						26					
						27					
						28					
						29					
						30					
						31					
						32					
						33					
						34					
						35					
						36					
						37					
						38					
						39					
						40					
						41					
						42					
						43					
						44					

Project Name: **Chevron Station No. 9-0129**
Project Number: **2015-006A**
Client: **Fields Holdings, LLC**

RILEYGROUP

Test Probe No.: **P1**

Sheet 1 of 2

Date(s) Drilled: **02/24/15**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25" Diameter**	Total Depth of Borehole: **22 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **The Riley Group, Inc.**	Approximate Surface Elevation: **n/a**
Groundwater Level: **17.5 feet bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **4700 Brooklyn Avenue Northeast, Seattle, Washington 98105**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
						Light brown, medium SAND, dry, no odor, no sheen	
0.3	P1-5				5	Light brown, medium, silty SAND, dry, no odor, no sheen	
0.2	P1-9				10	With ~0.5" diameter, angular gravel	
0.4	P1-15				15	Becomes wet	
	P1-W			▽			
0.1	P1-18				20		

Project Name: **Chevron Station No. 9-0129**

Project Number: **2015-006A**

Client: **Fields Holdings, LLC**

RILEYGROUP

Test Probe No.: **P1**

Sheet 2 of 2

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
0.2	P1-22				20	Light gray, medium, silty SAND, wet, no odor, no sheen	
						Test probe terminated at 22 feet bgs	
					25		
					30		
					35		
					40		
					45		
					50		
					55		

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Chevron Station No. 9-0129**
Project Number: **2015-006A**
Client: **Fields Holdings, LLC**

RILEYGROUP

Test Probe No.: **P2**

Sheet 1 of 1

Date(s) Drilled: **02/24/15**	Logged By: **SL**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25" Diameter**	Total Depth of Borehole: **10 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **The Riley Group, Inc.**	Approximate Surface Elevation: **n/a**
Groundwater Level: **Not Encountered**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **4700 Brooklyn Avenue Northeast, Seattle, Washington 98105**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION
					0	Concrete
						Light brown, fine to coarse, silty SAND, dry, no odor, no sheen
1.7						
0.4	P2-5				5	Vacuum, excavated to 5 feet bgs
0.1	P2-10				10	Test probe terminated at 10 feet bgs
					15	
					20	

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Chevron Station No. 9-0129**
Project Number: **2015-006A**
Client: **Fields Holdings, LLC**

RILEYGROUP

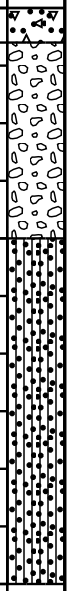
Test Probe No.: P3

Sheet 1 of 1

Date(s) Drilled: **02/24/15**	Logged By: **SL**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25" Diameter**	Total Depth of Borehole: **10 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **The Riley Group, Inc.**	Approximate Surface Elevation: **n/a**
Groundwater Level: **Not Encountered**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **4700 Brooklyn Avenue Northeast, Seattle, Washington 98105**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION
					0	Concrete
						Pea GRAVEL
						Product lines and air sparge/vapor extraction lines observed
						Light brown, medium to fine, silty SAND, dry, no odor, no sheen
1.7	P3-5				5	Vacuum, excavated to 5 feet bgs
1.0	P3-10				10	Test probe terminated at 10 feet bgs
					15	
					20	

Graphic Log



The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Chevron Station No. 9-0129**
Project Number: **2015-006A**
Client: **Fields Holdings, LLC**

RILEYGROUP

Test Probe No.: **P4**

Sheet 1 of 1

Date(s) Drilled: **02/24/15**	Logged By: **SL**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25" Diameter**	Total Depth of Borehole: **19 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **The Riley Group, Inc.**	Approximate Surface Elevation: **n/a**
Groundwater Level: **17.5 feet bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **4700 Brooklyn Avenue Northeast, Seattle, Washington 98105**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION
					0	Concrete
						Light brown, medium to fine, silty SAND, dry, no odor, no sheen
1.4						
3.4	P4-5				5	Vacuum, excavated to 5 feet bgs Becomes slightly moist, slight odor
90.1	P4-10				10	No odor, elevated PID reading
						Light gray, medium to fine, silty SAND, no odor, no sheen
8.3	P4-15				15	Light gray, medium to fine SAND, no odor, no sheen
	P4-19			▽		
						Test probe terminated at 19 feet bgs
					20	

Graphic Log

Project Name: **Chevron Station No. 9-0129**
Project Number: **2015-006A**
Client: **Fields Holdings, LLC**

RILEYGROUP

Test Probe No.: **P5**

Sheet 1 of 1

Date(s) Drilled: **02/24/15**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25" Diameter**	Total Depth of Borehole: **5 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **The Riley Group, Inc.**	Approximate Surface Elevation: **n/a**
Groundwater Level: **Not Encountered**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **4700 Brooklyn Avenue Northeast, Seattle, Washington 98105**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
0.7						Gray, pea GRAVEL, dry, no odor, no sheen	
1.1	P5-5					Light brown, medium, silty SAND, dry, no odor, no sheen	
					5	Test probe terminated at 5 feet bgs	
					10		
					15		
					20		

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Chevron Station No. 9-0129**
Project Number: **2015-006A**
Client: **Fields Holdings, LLC**

RILEYGROUP

Test Probe No.: P6

Sheet 1 of 1

Date(s) Drilled: **02/24/15**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25" Diameter**	Total Depth of Borehole: **18.5 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **The Riley Group, Inc.**	Approximate Surface Elevation: **n/a**
Groundwater Level: **16.5 feet bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **4700 Brooklyn Avenue Northeast, Seattle, Washington 98105**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION
					0	Asphalt
						Gray, pea GRAVEL, subangular, dry, no odor, no sheen
41.0	P6-5				5	Gray, fine to medium, silty SAND, dry, slight sheen, no odor
1.2	P6-9				10	
2.0	P6-13					
3.9	P6-14					Becomes wet, strong odor, sheen
				▽	15	
1,156						Test probe terminated at 18.5 feet bgs
					20	

Graphic Log

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Chevron Station No. 9-0129**	Test Probe No.: **P7**
Project Number: **2015-006A**	**Sheet 1 of 1**
Client: **Fields Holdings, LLC**	RILEYGROUP

Date(s) Drilled: **02/24/15**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25" Diameter**	Total Depth of Borehole: **17 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **The Riley Group, Inc.**	Approximate Surface Elevation: **n/a**
Groundwater Level: **Not Encountered**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **4700 Brooklyn Avenue Northeast, Seattle, Washington 98105**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION
					0	Asphalt
						Gray, pea GRAVEL, dry, no odor, no sheen
4.5	P7-5				5	Light brown, medium to fine, silty SAND, dry, no odor, no sheen Becomes moist
8.4	P7-10				10	Becomes dry
3.2	P7-15				15	Becomes gray
3.0	P7-17					Test probe terminated at 17 feet bgs
					20	

Graphic Log

Project Name: **Chevron Station No. 9-0129**	Test Probe No.: **P8**
Project Number: **2015-006A**	**Sheet 1 of 1**
Client: **Fields Holdings, LLC**	RILEYGROUP

Date(s) Drilled: **02/24/15**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25" Diameter**	Total Depth of Borehole: **19 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **The Riley Group, Inc.**	Approximate Surface Elevation: **n/a**
Groundwater Level: **17.5 feet bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **4700 Brooklyn Avenue Northeast, Seattle, Washington 98105**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
						Light brown, medium to fine, silty SAND with ~0.5" diameter subangular gravel, dry, no odor, no sheen	
1.7	P8-5				5		
						Becomes moist	
2.0	P8-10				10	Becomes dry	
2.1	P8-14				15		
2.5	P8-17						
	P8-W			▽		Becomes wet	
						Gray, medium to fine, silty SAND, wet, odor, sheen	
						Test probe terminated at 19 feet bgs	
					20		

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Chevron Station No. 9-0129** Project Number: **2015-006A** Client: **Fields Holdings, LLC**	RILEYGROUP Test Probe No.: **P9** **Sheet 1 of 1**

Date(s) Drilled: **02/24/15**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25" Diameter**	Total Depth of Borehole: **10 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **The Riley Group, Inc.**	Approximate Surface Elevation: **n/a**
Groundwater Level: **Not Encountered**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **4700 Brooklyn Avenue Northeast, Seattle, Washington 98105**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
						Light brown, medium to fine, silty SAND, dry, no odor, no sheen	
2.1	P9-5				5	Becomes slightly moist	
0.3	P9-10				10	Test probe terminated at 10 feet bgs	
					15		
					20		

Project Name: **Chevron Station No. 9-0129**

Project Number: **2015-006A**

Client: **Fields Holdings, LLC**

RILEYGROUP

Boring Log Key

Sheet 1 of 1

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
1	2	3	4	5	6	7	8

COLUMN DESCRIPTIONS

1. PID Reading, ppm: The reading from a photo-ionization detector, in parts per million.
2. Sample ID: Sample identification number.
3. Sample Type: Type of soil sample collected at the depth interval shown.
4. % Recovery: % Recoverysquare foot.
5. GW Depth: Groundwater depth in feet below the ground surface.
6. Depth (feet): Depth in feet below the ground surface.
7. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
8. Graphic Log: Graphic depiction of the subsurface material encountered.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS


Asphaltic Concrete (AC)


Portland Cement Concrete


Poorly graded GRAVEL (GP)


Silty SAND (SM)


Poorly graded SAND (SP)

TYPICAL SAMPLER GRAPHIC SYMBOLS


Auger sampler


Bulk Sample


3-inch-OD California w/ brass rings


CME Sampler


Continuous


Grab Sample


2.5-inch-OD Modified California w/ brass liners


Pitcher Sample


2-inch-OD unlined split spoon (SPT)


Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

Water level (at time of drilling, ATD)

Water level (after waiting)

Minor change in material properties within a stratum

Inferred/gradational contact between strata

Queried contact between strata

GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

SAIC
From Science to Solutions
18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Boring: SB-1

Project: Chevron Service Station No. 9-0129
Client: Chevron
Location: 4700 Brooklyn Ave NE, Seattle, WA

Logged By: G. Cisneros
Date Started: 10/2/2010
Date Completed: 10/2/2010

Driller: Cascade
Drill Method: AK/HSA
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	Analyical Results (mg/mk)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
								0	Asphalt
Moist	0.3					SW		1	(SW) Brown, loose, fine to medium SAND with 20% fine to medium gravel & <5% silt. No odor; No sheen. (Fill)
								2	Bricks
Moist	0.3					SW		3	(SW) Brown, loose, fine to medium SAND with 20% fine to medium gravel & <5% silt. No odor; No sheen. (Fill)
								4	(GP) Same as above, less gravel, No odor; No sheen.
Moist	0.0					GP		5	
								6	
								7	
								8	(GP) Light brown, loose, fine to medium SAND with <20% fine to medium gravel, <5% silt. No odor; No sheen.
						GP		9	
Moist	0.0	21 31 50				SP		10	(SP) Brown, dense, medium SAND with 10% fine gravel. No odor; No sheen.
								11	
Moist	0.0	32 50						12	
						SP		13	(SP) Brown, dense, medium to coarse SAND w/10% fine gravel. No odor; No sheen.
								14	
Wet	1.9	50		SB-1-15	G = N.D. D = N.D. HO = N.D. B = N.D.			15	
						SP		16	(SP) Orange brown, dense, medium SAND. No odor; No sheen; 10.0ppm.
								17	
Saturated	0.0	50		SB-1-17.5	G = N.D. D = N.D. HO = N.D. B = N.D.			18	(SP) Light brown to gray, dense, medium to coarse SAND with 5% gravel. No odor; No sheen.
						SP		19	
Saturated		50						20	(SP) Gray, dense, medium to coarse SAND wtih 10% fine to medium gravel.
						SP		21	
								22	
Saturated	1.3	25 50						23	(SP) Gray, dense, medium to coarse SAND with 5% fine to medium gravel. No odor; No sheen.
						SP		24	
								25	Bottom of borehole at 25.0 feet.
								26	

APPENDIX B

KCIW Individual Authorization Application for Construction Dewatering

INDIVIDUAL AUTHORIZATION APPLICATION FOR CONSTRUCTION DEWATERING

4700 BROOKLYN AVE NE SEATTLE, WA 98105

Instructions

It may be possible to send water from construction sites into the sanitary sewer if approved by the King County Industrial Waste Program (KCIW) and the local sewer agency.

Who needs approval

Most construction projects discharging to sanitary sewers in King County's Wastewater Service area (including combined sewers that carry stormwater and sewage in the older parts of Seattle) need approval.

- Single family residential construction projects should check with the local city or sewer agency. KCIW does not require applications from these projects.
- Projects discharging to separated storm sewers or surface water bodies do not need approval from wastewater utilities. Check with the appropriate entity:
  - Contaminated site any size: Washington State Department of Ecology
  - Clean site more than 1 acre: Washington State Department of Ecology
  - Clean site less than 1 acre: Local jurisdiction's stormwater utility

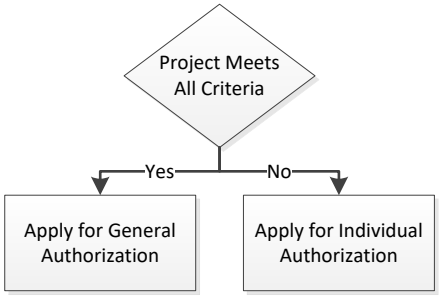
How to get approval to discharge to sanitary sewers

1. Contact the local sewer agency. Confirm they accept water from construction sites. Confirm the location and conditions for discharging to their system. A list of local agencies is available: http://www.kingcounty.gov/environment/wtd/About/SewerAgencies.aspx
2. Select your King County construction dewatering application (individual or general).
3. Download, complete, print and sign your application. Scan your signed application and submit it to King County via email: info.KCIW@kingcounty.gov.
4. Contact the local sewer agency for permission to connect to their system and any additional requirements.

Select your King County application

KCIW offers two types of authorizations for discharging construction water to sanitary sewers: Individual and General. You may be able to use the simpler form, *General Authorization Application for Construction Dewatering*, if your project meets all of the following criteria:

- Site is not contaminated.
- Site is less than 1 acre.
- Project will discharge less than 25,000 gallons per day (gpd) to the sanitary sewer.
- Site has a sedimentation tank.



If your project does not meet all four criteria, you must use this form, *Individual Authorization Application for Construction Dewatering*. Both forms are available at www.kingcounty.gov/industrialwaste. Applying for a General Authorization is easier and requires less documentation (no exhibits) than an Individual Authorization. No reporting is necessary once the General Authorization is approved.

Tips for a Successful Application

- Complete one application for each construction site.
- Answer all questions; use additional pages, if needed. (See the application checklist on page 2.)
- Make sure the authorized representative, owner, or delegated authorized representative signs this application. (See pages 3 and 4.)
- Keep the original signed application in your records until the project is complete.
- For questions, contact KCIW at info.KCIW@kingcounty.gov or 206-477-5300.

Application Checklist

Before submitting your application, use this checklist to make sure you have included all the necessary information and documentation.

Checklist for Individual Authorization Application

Application Component and Page Number	Completed
Signature of authorized representative or owner (page 3)	☒
Signed signature delegation if authorized representative or owner is delegating signature authority (page 4)	☒
Project Information (page 5)	☒
Detailed project information (pages 6 and 7)	☒
Exhibit A, Site Plan (page 8)	☒
Exhibit B, Wastewater Treatment System Description (page 8)	☒
Exhibit C, Dewatering Schedule (required for sites requesting discharge approval for longer than six months) (page 8)	☐
Exhibit D, Description of Contamination (required for sites with known groundwater or sediment contamination) (page 8)	☒

Required Signature

NOTE: This application must be signed below by a site owner, an authorized representative, or a delegated authorized representative. To delegate signature authority to an individual or position, complete the *Delegation of Signature Authority* on the reverse page.

King County Code 28.82.050 requires that all wastewater discharge applications be signed by an "authorized representative of the industrial user." An authorized representative is someone who performs policy or decision-making functions for an organization, such as a president, secretary, treasurer, vice president, general partner, director or highest official designated to oversee the operation.

A. For a corporation, it is the president, secretary, treasurer, or a vice-president of the corporation in charge of a principal business function or any other person who performs similar policy or decision-making functions.
B. For a partnership or proprietorship, it is a general partner or proprietor.
C. For a government agency, it is a director or highest official appointed or designated to oversee the operation and performance of the industry.
D. An individual or position—delegated in writing by one of the first three (A–C above)—who is responsible for the overall operation of the facility from which the discharge originates or has overall responsibility for environmental matters for the company or agency.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Eran Fields	Managing Member of Manager
Name (Print)	Title (Print)
	3/13/17
Signature	Date

Contact information:

FH Brooklyn, LLC	310.903.3141
Company Name	Telephone Number
2251 Linda Flora Drive	efields@fieldsholdings.com
Street Address	Email Address
Los Angeles, CA 90077	
City, State, and Zip Code	

Delegation of Signature Authority

This form is only required if the authorized representative wishes to delegate signature authority. Use additional copies of this page to delegate to multiple people or positions.

Applicant

Company/Agency Name

Permit or Authorization Number (if known)

Person or Position Receiving Signature Authority

Name (Print)

Title (Print)

Signature (If delegating a person)

Date

Contact information:

Company Name

Telephone Number

Street Address

Email Address

City, State, and Zip Code

Person Delegating Signature Authority

By signing below, I certify that I am an authorized representative (as defined in King County Code 28.82.050) of the industrial user named above. My position fits the following category (listed on page 3 of this application).

Check one: ○ A ○ B ○ C

Name (Print)

Title (Print)

Signature

Date

Contact information:

Company Name

Telephone Number

Street Address

Email Address

City, State, and Zip Code

Project Information

Applicant/Project Name	Venture General Contracting/4700 Brooklyn Redevlopment		
Project Location (Address, City, and Zip Code)	4700 Brooklyn Ave NE Seattle, WA 98105		
NOTE: The site owner will be issued the discharge approval; the contractor or consultant will be sent a copy.			
	Site/Project Owner (Must be authorized or delegated signatory)	**Contractor/Consultant**	
Name	Eran Fields	Matt Parent	
Title	Owner	Partner	
Company	FH Brooklyn, LLC	Venture General Contracting	
Mailing address	2251 Linda Flora Drive	1518 1st Ave S #400	
City/state/zip code	Los Angeles, CA 91403	Seattle, WA 98134	
Office telephone no.	818-386-8692	206-582-4500	
Cellphone no.			
Fax no.		206-528-4501	
Email address	efields@fieldsholdings.com	mparent@ventureseattle.com	
Primary person to be contacted about this application if not listed above (name, address, telephone, email)	Megan Habash Venture General Contracting 1518 1st Ave S #400 Seattle, WA 98134 425-214-4126 mhabash@ventureseattle.com		
NOTE: Use attachments, if necessary, to provide the following information.			
Detailed description of project construction	Demolition of existing 1-story convenience store and gas station and excavation to approximately 24 ft below ground surface to allow for building construction. Excavation will require dewatering using perimeter well points and sumps. New construction of a 24-story residential building with below-grade parking.		
Start date of dewatering	August 2017	End date of dewatering	January 2018
Site size	16,462 SF		
Environmental permits issued for the site that are relevant to this project (for example: NPDES, Ecology Notice of Intent)	N/A		

Detailed Project Information

Follow these instructions to complete the table below:

- **Process or activity generating wastewater.** Enter a brief process number and name for each process and activity (for example: 1. well dewatering, 2. wheel wash, 3. equipment cleaning, 4. concrete curing, 5. jet grouting, 6. contaminated stormwater runoff).
- **Substances and/or pollutants in wastewater.** List all substances in the wastewater (such as sediment/solids, caustic and/or acidic, oil and grease, other contaminants if groundwater or soil is contaminated).
- **Type of pretreatment.** For each waste stream, identify the type of wastewater pretreatment you will provide (such as filtration, chemical precipitation, settling, pH neutralization, electrocoagulation, chitosan). King County policy requires that at a minimum, an appropriately sized settling tank (weir tank preferred) must be installed to provide gravity separation.
- **Frequency of discharge.** Indicate the frequency of discharge. Enter "continuous" if you will discharge continuously to the sewer as the wastewater is generated or "batch" if you will store wastewater and discharge it to the sewer in batches.
- **Discharge point.** Enter the manhole or side sewer location approved by the local city or sewer agency for temporary connection to the sewer.
- **Daily quantity discharged.** Calculate the projected daily maximum discharge volume for each process or activity and then the total for all processes and activities.

Process or Activity Number	**Process or Activity that Generates Wastewater**	**Substances and/or Pollutants in Wastewater**	**Type of Pretreatment**	**Frequency of Discharge** (continuous or batch)	**Discharge Point** if known (manhole, side sewer location)	**Maximum Daily Quantity Discharged** (gallons)
1	Excavation dewatering and other incidental construction-related activities	Petroleum hydrocarbons, MTBE, cis-DCE, vinyl chloride, Pb	Weir tank; oil/water separator; bag filter; activated carbon	Continuous	Existing side sewer on Brooklyn Ave NE	73,100 gpd
2	Storm water falling into excavation	(same as 1 above)	(same as 1 above)	Rain events	(same as 1 above)	**20,500 gpd**
					Total maximum daily discharge volume	93,600 gpd

Water Quantity Balance Calculations

For each process or activity listed in the table above, thoroughly document the information, methods, and assumptions used to calculate your site's water quantity balance. Use a storm event of 2 inches per 24 hours to calculate the maximum daily stormwater runoff volume. Add attachments if you need more space.

Process No. 1 - Max. daily discharge quantity from this process will be controlled such that total allowable daily discharge of 65 gpm (93,600 gpd) is not exceeded.

Process No. 2 - Max. daily discharge quantity based on 2 inches of rainfall on lot size of 16,462 square feet.

Detailed Project Information (continued)

If your project will discharge greater than 25,000 gpm during November through April, explain in detail why discharge to surface water is not feasible.

Site groundwater is contaminated. Pretreatment to consistently achieve water quality standards for discharge to surface water is not feasible.

Is there known groundwater or soil contamination on site?

Yes

If yes, provide a summary of the contamination, site history, and sources of contamination. Submit Exhibit D (see page 8).

The site operated as a retail gasoline station from before 1920 through October 2016. Fuel releases have resulted in soil and groundwater contamination, including separate-phase product (weathered gasoline) floating on the groundwater table. In addition, groundwater in the southwest corner of the site is impacted by low concentrations of chlorinated solvents. A Remedial Investigation (RI) is currently being conducted under an Agreed Order with the Washington Department of Ecology. Contaminants of concern in groundwater are: total petroleum hydrocarbon (TPH) in the gasoline, diesel, and heavy oil ranges; the gasoline constituents benzene, toluene, ethylbenzene, and xylenes (BTEX); the gasoline additives lead and methyl tertiary-butyl ether (MTBE); and the chlorinated volatile organic compounds (cVOCs) cis-1,2-dichloroethene and vinyl chloride. Refer to Exhibit D for additional information.

Does this site have a Temporary Erosion and Sediment Control (TESC) Plan that outlines best management practices (BMPs)?

(●) Yes — If yes, the plan must be available onsite for reference throughout the project.

( ) No — If no, please explain:

Contact the local sewer agency (city or sewer district) to receive instructions on discharge conditions. (www.kingcounty.gov/environment/wtd/About/SewerAgencies.aspx) and complete the following:

Name and telephone number of the local city or sewer district personnel you contacted.

Kevin Donnelly, (206)-263-3000

Maximum discharge rate (gpm) specified by the local city or sewer district contact.

65 gpm

Sewer account number or billing method that the local city or sewer district will use to assess sewer fees.

Per Kevin Donnelly, billing account will be set up prior to discharge with SPU Customer Service, Daniela Schwedas, 684-7817.

Exhibits

Exhibits A and B are required for all applications.

A. Site Plan. Attach a site plan that shows the location of activities or processes generating wastewater, settling ponds/tanks or other wastewater treatment system components, wastewater conveyance lines, temporary points of discharge (approved by the local city or sewer district), groundwater and/or sediment sampling locations, streets, and public sewer and storm drainage facilities.

B. Wastewater Treatment System. Attach a description of the proposed wastewater treatment system, including the following:

1. Diagrams, specification sheets, and basic design data for system components (for example, pumps, tanks, mixers).
2. Schematic flow diagram of the treatment process that shows system piping, tanks, and control features.
3. Maximum flow rate for the system.

NOTE: KCIW may require an engineering justification and/or other evidence demonstrating that discharge from the site will meet applicable permit effluent limitations.

Minimum Standards for Rectangular Sedimentation Tank Design is available here: http://www.kingcounty.gov/environment/wastewater/IndustrialWaste/GettingDischargeApproval/Construction/Sedimentation_tanks.aspx.

Exhibit C is required for approval of projects that will discharge longer than six months:

C. Dewatering Schedule. Attach a wastewater discharge schedule indicating when each activity or process is expected to generate wastewater for the duration of the project. For each process and discharge period, specify the projected maximum daily discharge volume. (See example below.)

NOTE: The chart below is included as an example only. You may create a similar table or use a different format, provided it includes the requested information.

Project Name: E X A M P L E O N L Y

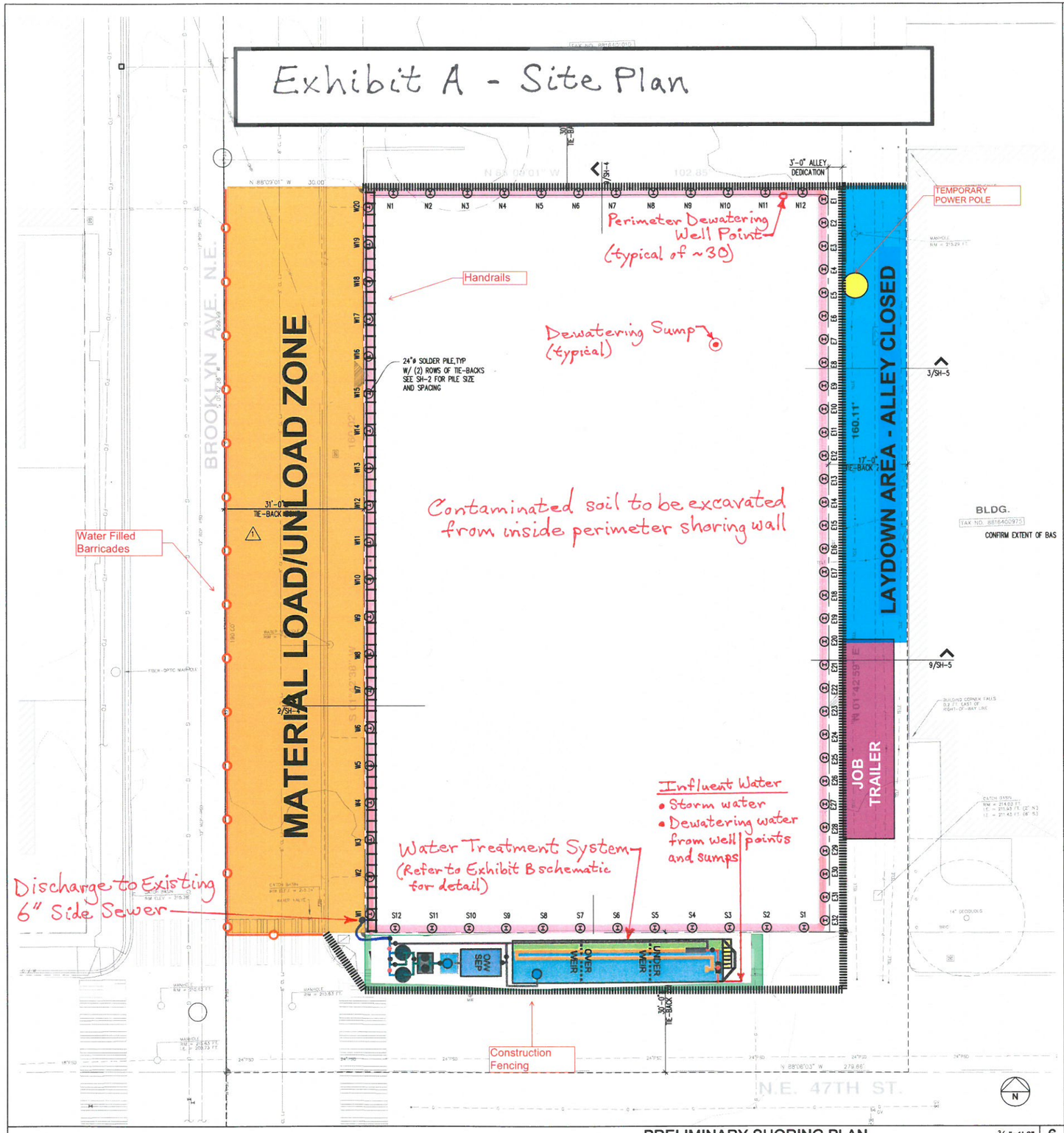
	Start Date					Project Timeline								End Date	
	week	week	week	week	week	week	week	week	week	week	week	week	week	week	week
Process Generating Wastewater	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Process 1 - drill slurry decant							max 1,000 gpd								
Process 2 - wheel wash									max 500 gpd						
Process 3 - Excavation dewatering					max 8,500 gpd							max 25,000 gpd			
Process 4 - Contaminated Stormwater								max 45,000 gpd							

Exhibit D is required for sites with known groundwater or sediment contamination:

D. Description of contamination sources and chemical characteristics. Attach a summary (preferably in table format) of all available groundwater and/or sediment quality data. Indicate groundwater and/or sediment sample locations on the site plan (Exhibit A).

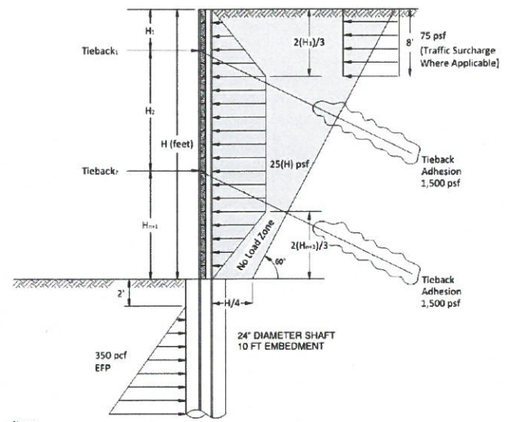
EXHIBITS

Exhibit A - Site Plan



PRELIMINARY SHORING PLAN 3/32"=1'-0" 6

Tieback Solider Pile/Lagging Shoring Wall
Two or More Rows of Tiebacks



Notes:
1. Apparent earth pressure and surcharge act over the pile spacing above the base of the excavation.
2. Passive earth pressure acts over 2 times the concreted diameter of the soldier pile, or the pile spacing whichever is less.
3. Passive pressure includes a factor of safety of 1.5.
4. Additional surcharge from footings of adjacent buildings should be included.
5. This pressure diagram is appropriate for temporary soldier pile and tieback walls. If additional surcharge loading (such as from soil stockpiles, excavators, dumptrucks, cranes, or concrete trucks) is anticipated, RGI should be consulted to provide revised surcharge pressures.

Not to Scale

(EXCERPT FROM GEOTECHNICAL ENGINEERING REPORT PREPARED BY RILEY GROUP, DATED APRIL 7, 2015.)

TYP LOADING DIAGRAM NTS 2

Perimeter Shoring Wall

NOTES:
1. OWNER TO SECURE AGREEMENTS W/ CITY OF SEATTLE AND ADJACENT PROPERTY OWNERS FOR TEMPORARY TIE-BACK EASEMENT.
2. TIE-BACK TO BE COORDINATED W/ UTILITIES.
3. SITE WILL HAVE CONSTRUCTION DE-WATERING. LAGGING WILL PERMIT INFILTRATION.
4. ANCHOR DESIGN LENGTHS PROVIDED ON THE SDCI APPROVED PLAN SHALL NOT BE EXCEEDED WITHOUT PRIOR SDCI REVIEW AND APPROVAL.
5. ALL SEWER AND STORM LINES IN THE ROW WITHIN 10 FEET (OR WITHIN 20 FEET IF SUCH LINES ARE 30 FEET OR MORE OFF SITE PROPERTY LINE) OF ANY PROPOSED SHORING ELEMENT SHALL BE VIDEOTAPED OF PRE-PROJECT CONDITION AND A COPY SENT TO SDOT PRIOR TO PRE-CONSTRUCTION MEETING.

D. Heffner
Aspect Consulting, LLC

3

caron
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office • 206.367.1382
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FOSSATTI PAWLAK
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4700 BROOKLYN AVE NE

4700 BROOKLYN AVE NE
SEATTLE WA 98105

DPD # 6499919

SUBMITTAL / REVISION	DATE
MUP SUBMITTAL	12.01.2015
⚠ CORRECTION CYCLE 1	2.22.2016
⚠ CORRECTION CYCLE 2	6.13.2018

STAMP

SHEET TITLE
SHORING PLAN

SHEET NUMBER
SH-1

FP PROJECT NO. 15-156

Exhibit B – Wastewater Treatment System

Individual Authorization Application for Construction Dewatering
4700 Brooklyn Ave NE, Seattle, WA

Details of the proposed wastewater treatment system are provided in this exhibit (see itemization below). The system will have a nominal capacity of 100 gallons per minute (gpm), but discharge to sanitary sewer will not exceed 65 gpm.

B.1 Water Treatment System Schematic

B.2 Water Treatment System Process Flow Diagram

B.3 Chitosan Contactor Unit (Passive Treatment Sock)

B.4 Weir Tank

B.5 Oil/Water Separator (OWS100)

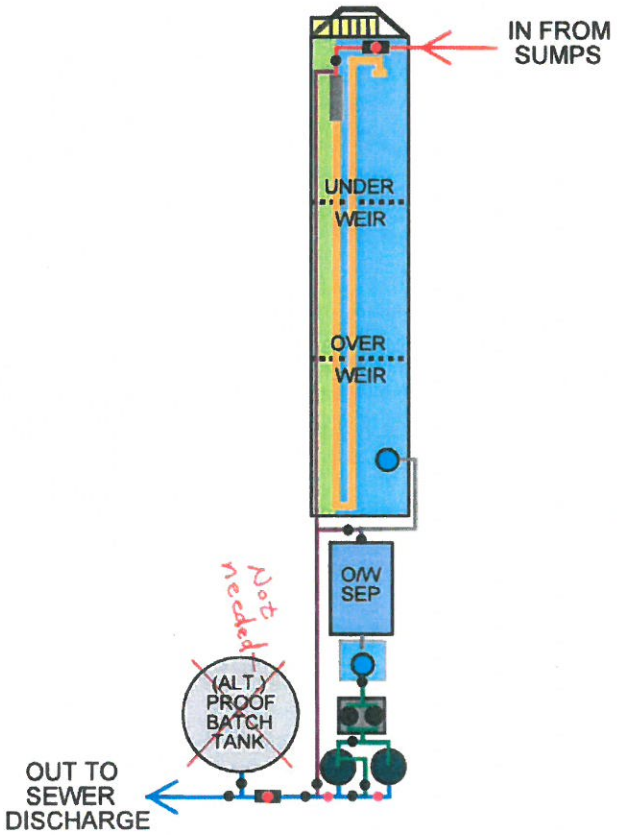
B.6 Bag Filter (BF200)

B.7 Granular Activated Carbon (PV-2000) Liquid Phase Adsorbers (two vessels in series, each containing 2,000 pounds of GAC)

D. Heffner
Aspect Consulting, LLC
11/11/16

Exhibit B.1

- 2" Sch 40 PVC From Sumps to Weir Tank
- 6" Chitosan Contactor Unit
- 4" Sch 40 PVC Mixing Line and Difuser
- 2" Recycle Line
- Submersible Pump w/ Float Control
- 2" Sch 20 PVC From Weir Tank Cell to Oil/ Water Seperator
- 100 GPM Oil / Water Seperator
- 2" Sch 40 PVC From Pump, Through Bag Filter and Into Carbon
- 100 GPM Bag Filter — 100 GPM GAC Vessels
- 2" Sch 40 PVC Discharge From Carbon to Sewer (or batch tank)
- 2" Flow Meter
- 2" Flow Control Gate Valve
- Sample Port



This passive treatment system is designed to accept water from temporary sumps or well points that will be used to de-water work areas on a 24/7 basis as well as wheel wash decant and out of compliance storm water. Each sump could be plumbed to a common 2" discharge line with check valves to prevent back flow or recirculation. In the case of very high turbidity (+ 2,000 NTU), it may be necessary to use an additional settlement tank after the weir tank to increase dwell time prior to going through the oil/water seperator. The system could treat peak flows up to 100 GPM but is designed to discharge at 65 GPM using the surge cell in the weir tank. Discharge could go directly to sewer or be stored in a proof batch tank until testing results are confirmed.

Incoming water will flow through a chitosan contactor unit mounted on top of the weir tank and then through 60' of 4" mixing line prior to entering the weir tank via a flow diffuser. The under weir will hold any floating organic contaminates behind it for removal and the area past the over weir will be used as a surge cell where a 2"-115 volt pump sends collected water to a OWS100 oil/ water separator. the OWS100 gravity discharges into a 250 gal. pump sump, where a 3"-480 volt submersible pump transfers water through a BF200 bag filter with 1 micron bags and then through two PV1000 GAC units configured in lead and lag ~~(a manifold will allow a 100 GPM flow rate in a parallel configuration)~~. The discharge from the GAC units will go through a totalizing flow meter and directly discharged to sewer. As an alternate option, water from the GAC units could be stored in a 6k gallon proof tank prior to discharge.

Flow control valves to balance pump discharge are included on the weir tank inlet, oil/ water transfer pump and bag filter pump lines. Sample ports will be added on the incoming line, after the oil/ water separator, and down stream of both the lead and lag GAC units. ~~As stated above, the GAC units shown include a manifold that allows for a lead and lag configuration for a 65 GPM flow rate as well as a parallel configuration for a 100 GPM flow rate.~~

D. Heffner
Aspect Consulting
11/8/16

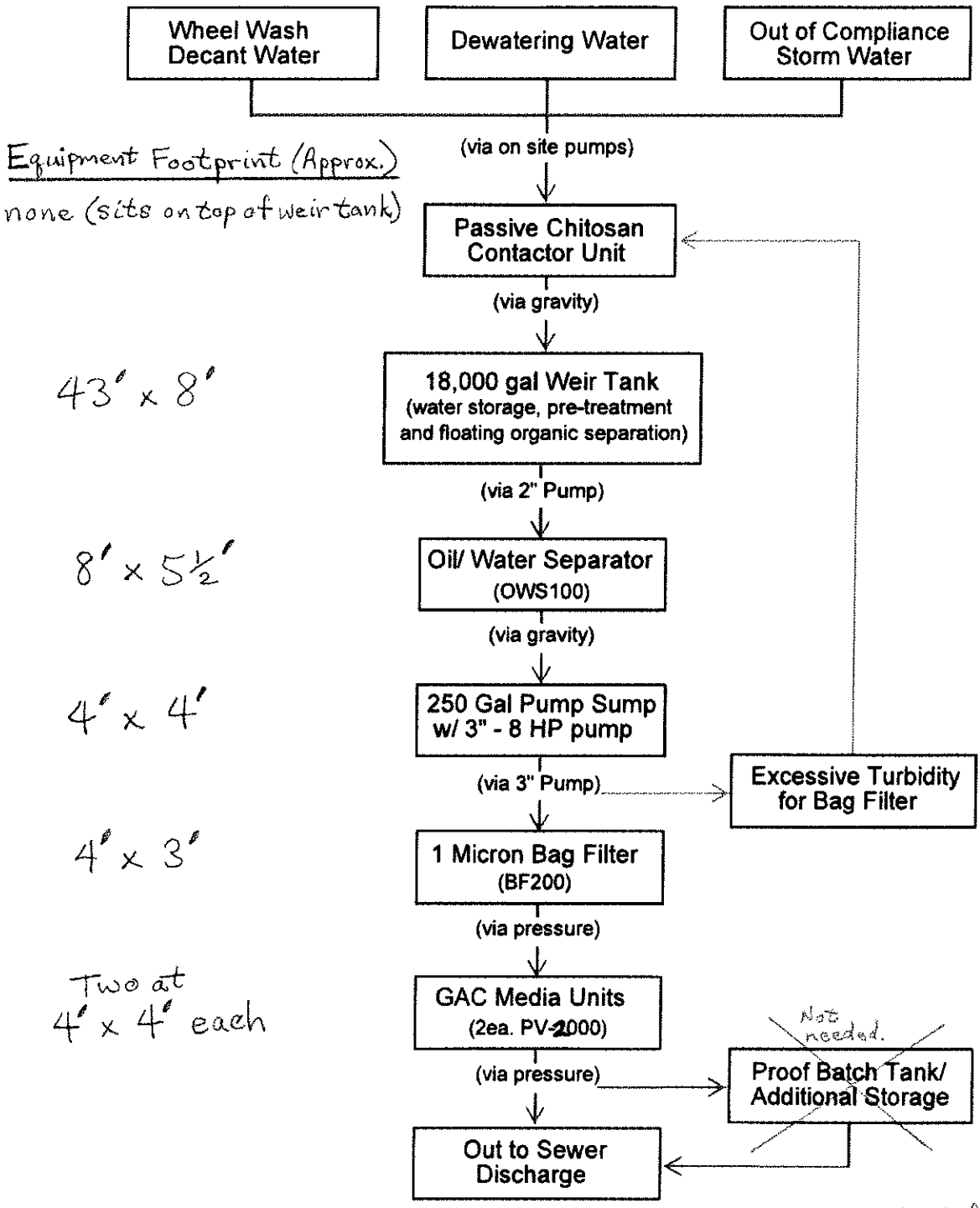
SCALE 1"= 15.00 ft

NSC WATER QUALITY
PO BOX 2319 REDMOND WA 98073
(425)864-1645 ericnwsoilcement@yahoo.com

65 GPM Water Treatment System Schematic 11-7-16

4700 Brooklyn Site ; Seattle, WA

Exhibit B.2



D. Heffner
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11/8/16

NSC WATER QUALITY
PO BOX 2319 REDMOND WA 98073
(425)864-1645 ericnwsoilcement@yahoo.com

Water Treatment System Process Flow Diagram 11-7-16

4700 Brooklyn Site; Seattle, WA

Exhibit B.3

Sound Environmental Concepts, LLC

Passive Treatment Socks Specification Sheet

Purpose: This specification sheet communicates the necessary characteristics for the SEC Chitosan Lactate product. It has taken many years to develop the passive delivery systems, the regulatory background testing, the operation and training manuals, and performance results that accomplish the necessary end objectives of water treatment.

Chitosan lactate flake (100%) Specification:

Viscosity range: ≥ 150 cps (1% solution @ standard temperature and pressure after 2 hours of mixing)
pH (1% solution): 3.5 to 4.0
Solids content: ≤ 1.5%
Turbidity: 10 NTU or less
Solubility: > 99%

Ingredients:
Chitosan lactate is a water treatment grade of chitosan and lactic acid. There are no additional additives.

Shelf-Life:
The dry product has indefinite shelf-life

Manufactured by: Sound Environmental Concepts, LLC

Passive Treatment Sock 1-lb.

Specifications:

Length	36 Inches
Width:	5 in. diameter
Fabric:	Woven polypropylene
Chitosan:	1.0 lb (dry weight)
Treatment:	100,000 gal. @ 1 mg/L

Passive Treatment Sock 2-lb.

Specifications:

Length	72 Inches
Width:	5 in. diameter
Fabric:	Woven polypropylene
Chitosan:	2.0 lb (dry weight)
Treatment:	200,000 gal. @ 1 mg/L

Applications:
Turbid water pretreatment (gravity settling)
Sand filtration
Biofiltration
Bag Filtration

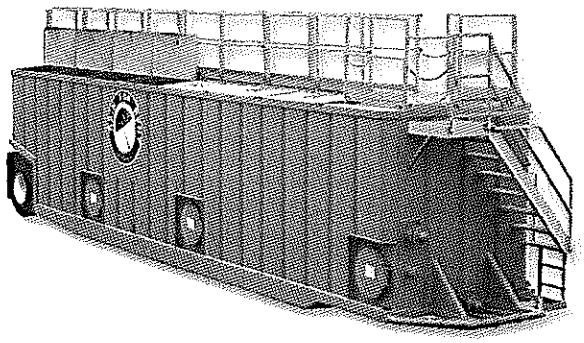
Exhibit B.4

Steel Tank

Flip Top Weir

Overview:

18,100 gallon flip top weir tanks from Rain for Rent have a standard "V" shaped floor for ease of draining all stored liquids completely through a 4" butterfly valve with Buna seals standard.



Features:

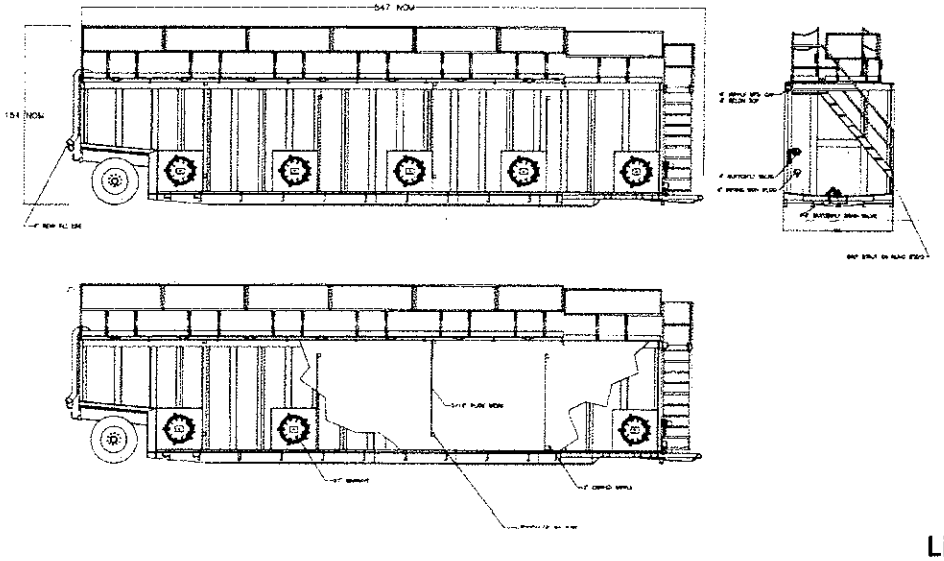
Store liquids with confidence with Rain for Rent's 18,100 gallon flip top weir tank. Permanently attached axels for maximum maneuverability allow this 18,100 gallon tank to be moved with ease on the jobsite and a safety staircase ensures proper protection for workers on site. Internal weirs allow for extra filtration and settling of materials.

Specs:

Manways	Four 22" hatches
Material	Steel
Capacity	18,100 gallons
Dry weight	27,000 lbs.
Footprint:	516" x 96" x 126"

Accessories:

- Spillguard
- Suction and Discharge Hoses
- Level gauges



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800-742-7246

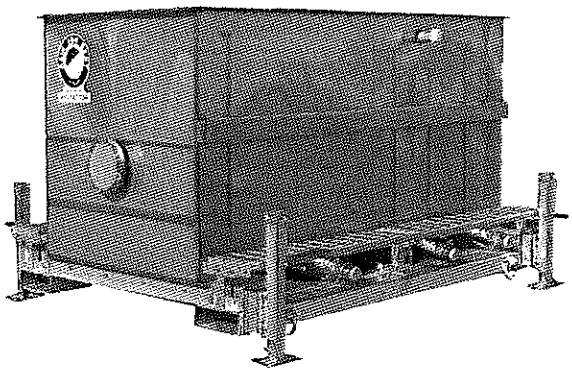
rainforrent.com

Exhibit B.5

Oil Water Separator OWS100

Overview:

The OWS100 is a parallel corrugated plate gravity displacement type separator designed in accordance with API 421 to remove free and dispersed non emulsified oil and settleable solids. It is skid mounted with leveling jacks. It requires no power and features no moving parts for ease and reliability.



Features:

The OWS 100 removes free and dispersed non-emulsified oil, settleable solids and additionally functions as a gravity flow oil-skimmer for flows up to 100 GPM.

- 3 cubic feet sludge capacity
- 0.5 inch coalescing pack or oil attracting media
- One tank requiring six coalescing packs

Specs:

Flow	Up to 100 GPM
Material	Stainless Steel
Dry weight	1400 lbs.
Footprint:	96" x 66"
Inlet x outlet	4" x 4" Flange

Accessories:

- E-CONTAIN® Spillguards
- SolidGround® Traction Mats
- Pumps
- Tanks
- PipeStax®
- HoseTrax™
- Suction and Discharge Hoses

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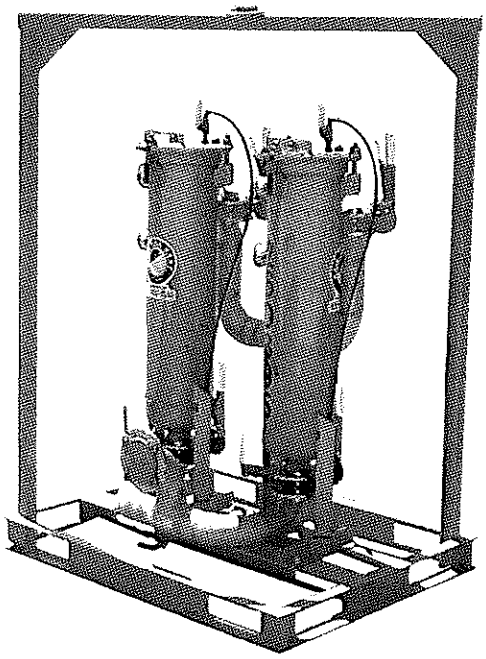
Exhibit B.6

Bag Filter

BF200

Overview:

The BF200 bag filter unit features two bag filter tanks and utilizes 7" x 30" bag filters for superior filtration from 100 to 1 micron for flows up to 200 GPM.



Features:

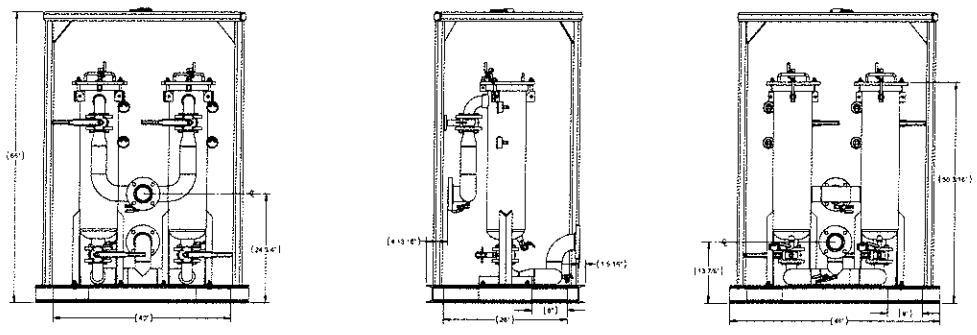
- No moving parts
- Skid mounted
- Fitted with bleed valves and pressure gauges
- Chambers constructed of 304 Stainless Steel
- Piping constructed of 304 stainless steel
- Stainless Steel inlet and outlet manifolds

Specs:

Max Flow	200 GPM
Material	Stainless Steel
Max PSI	125 PSI
Dry weight	800 lbs.
Footprint:	48" x 36"
Inlet x outlet	3" x 3" Flange

Accessories:

- Spillguard
- Suction and Discharge Hoses



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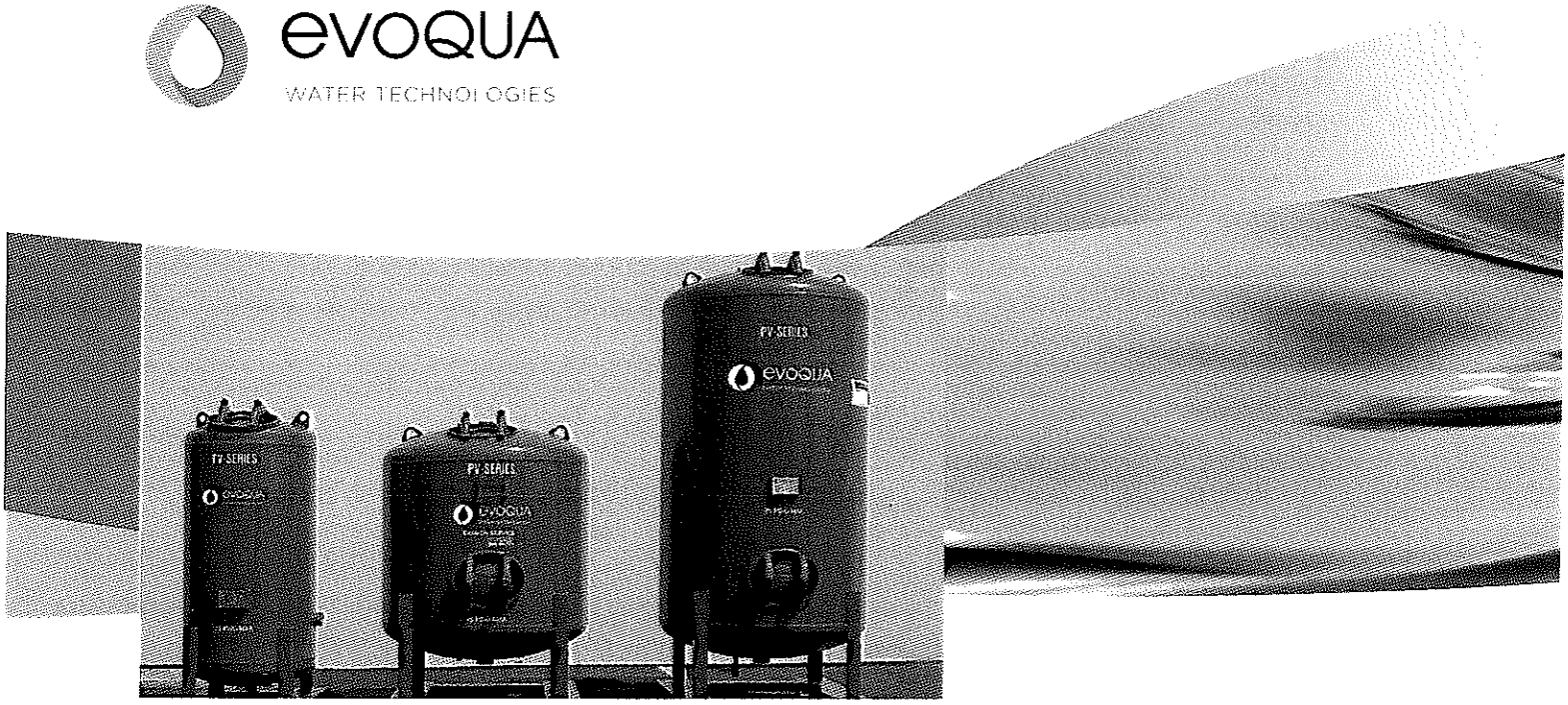
rainforrent.com

Exhibit B.7

evoqua
WATER TECHNOLOGIES



PV® SERIES LIQUID PHASE ADSORBERS

~~PV-500, PV-1000, PV-2000~~ PV-2000

Applications

The PV® Series adsorbers are designed for use in a wide range of low/high flow and pressure applications.

- Groundwater remediation
- Wastewater filtration
- Tank rinse water treatment
- Pilot testing
- Underground storage tank clean up
- Leachate treatment
- Dechlorination
- Spill cleanup
- Hydrotesting
- Drinking Water

Installation, Startup and Operation

Evoqua can provide a total service package that includes utilizing OSHA trained personnel providing on-site carbon changeouts, packaging and transportation of spent carbon for recycling at our reactivation facilities.

At the time of purchase or rental of the adsorbers, arrangements should be made for the reactivation of the spent carbon. Evoqua will provide instructions and assistance on how to obtain acceptance of the spent carbon at our reactivation facilities. Spent carbon cannot be accepted for reactivation until the acceptance process is completed.

BENEFITS & DESIGN FEATURES

- Durable, carbon steel construction includes internally/externally welded seams
- SSPC-SP5 sandblasted, NSF-approved baked epoxy interior coating; urethane exterior finish
- Approved for the transport of hazardous spent carbon
- Top and side manways permit easy access and inspection of vessels internals and linings
- Skid-mounted for easy handling and installation
- Optimized underdrain system for low pressure drop operation

Piping Manifold (Optional)

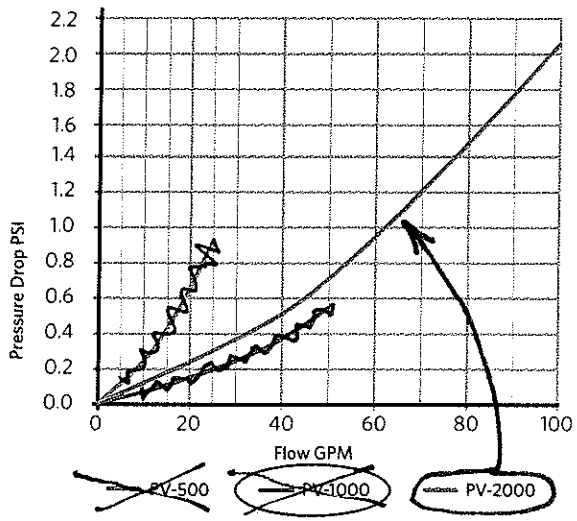
- 2"/3" sch 80 PVC piping and valves that allow either adsorber to be used in the lead or lag position (optional carbon steel and stainless steel piping)
- Series or parallel operation
- Clean utility water connection for manual backflush
- Sampling ports and pressure gauges
- Flexible hoses with Kamlock fittings allow easy installation and removal during service exchange operations
- Available for purchase or rental

SPECIFICATION/TYPICAL PROPERTIES

	PV-500	PV-1000	PV®-2000
Dimensions (Dia. x Overall Height - Approx.)	30" x 5'7"	48" x 5'7"	48" x 8'8"
Inlet Connection (Top)	2"	3" NPT (Female)	3" NPT (Female)
Outlet Connection (Bottom)	2"	3" NPT (Male)	3" NPT (Male)
Manway, Top & Lower Side	11" X 15" (top only)	11" X 15"	11" X 15"
Internal Piping	PVC	PVC	PVC
Interior Coating (All Units)	Epoxy	Epoxy	Epoxy
Exterior Coating (All Units)	Epoxy/Urethane	Epoxy/Urethane	Epoxy/Urethane
Carbon Fill Volume (Cu.ft.)	18.5	34	68
Vessel Weight (lbs.):			
Shipping (With Carbon)	1050	1910	3200
Operating (Approx.)	1750	4300	7500
Flow, CFM (Nominal)	25	50	100
Pressure, PSIG (Maximum)[1]	75	75	75
Temperature, °F (Maximum)	140	140	140
Pounds Of Activated Carbon	500	1000	2000
Contact Time @ Max Flow/Min	5	5	5
Backflush rate (GPM) @ 55°F	15-20	40-50	40-50

[1]The PV® Series adsorbers are not ASME code stamped. Pressure rating applies to liquid only.
For detailed dimensional information or drawings, contact your local Evoqua sales representative.
For information on the HP® Series ASME code stamped adsorbers, contact your local Evoqua representative

PV® Series Pressure Drop (8x30 Mesh Gac)



Safety Note: Wet activated carbon readily adsorbs atmospheric oxygen. Dangerously low oxygen levels may exist in closed vessels or poorly ventilated storage areas. Workers should follow all applicable state and federal safety guidelines for entering oxygen depleted areas.

All information presented herein is believed reliable and in accordance with accepted engineering practices. Evoqua makes no warranties as to completeness of information. Users are responsible for evaluating individual product suitability for specific applications. Evoqua assumes no liability whatsoever for any special, indirect or consequential damages arising from the sale, resale or misuse of its products.

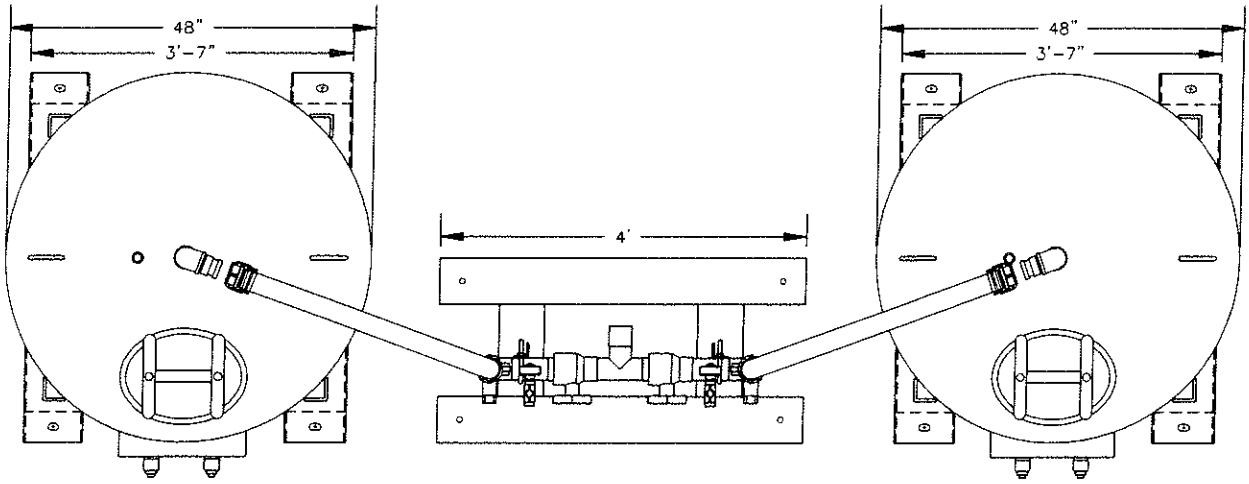
EVOQUA
WATER TECHNOLOGIES

4800 North Point Parkway, Suite 250, Alpharetta, GA 30022

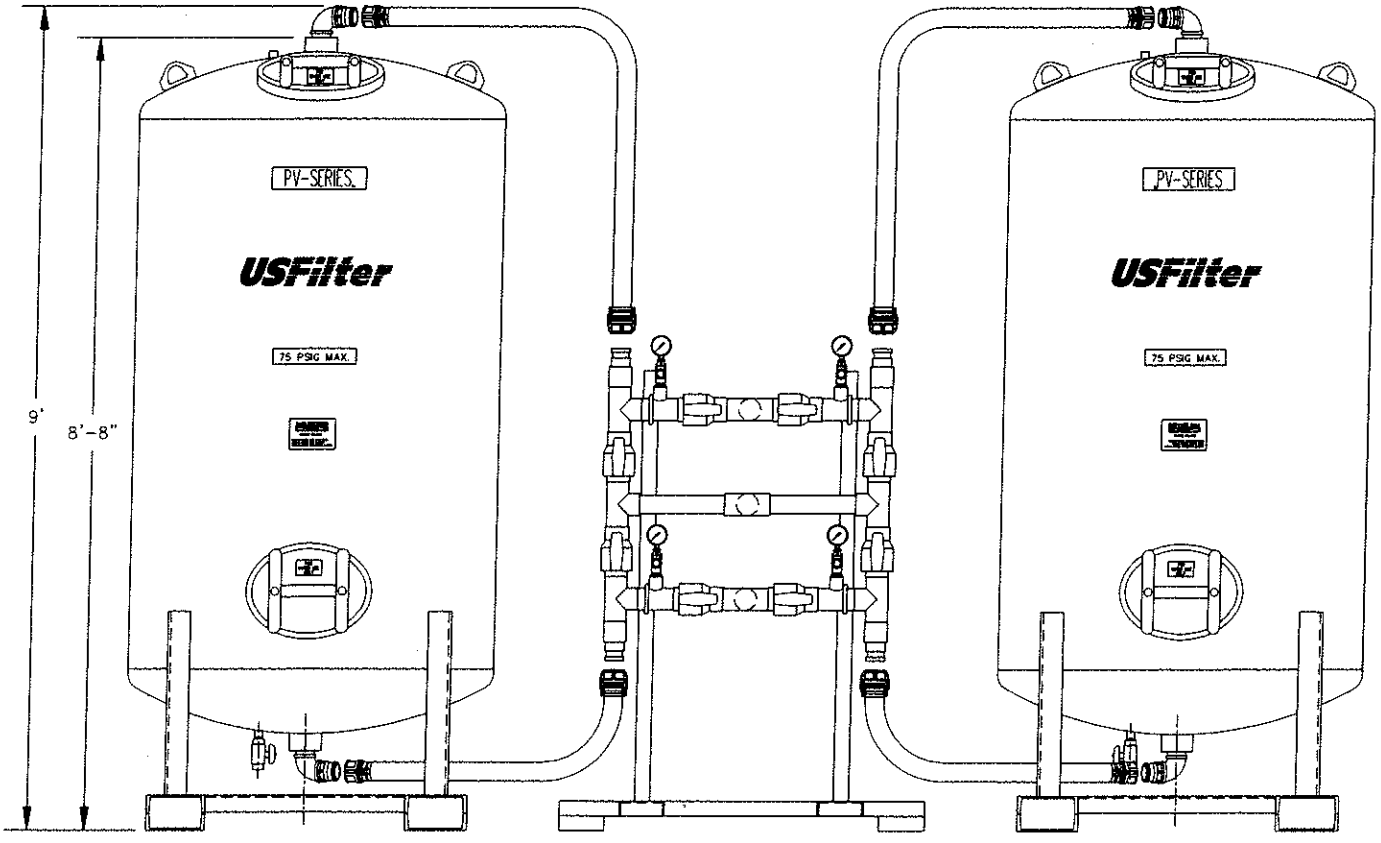
+1 (866) 926-8420 (toll-free) **+1 (978) 614-7233** (toll) www.evoqua.com

B.7-2

STD: 2-0600-8X11A	INTL REF:	



PLAN VIEW



ELEVATION

DESIGNER	DATE
AJA	11-8-02
CHECKER	DATE
ENGINEER	DATE
MANAGER	DATE
FILE:	
SCALE: 1" = 2'	

TITLE: 2 PV2000 W/ 2" MANIFOLD GENERAL ASSEMBLY

CLIENT

USFilter

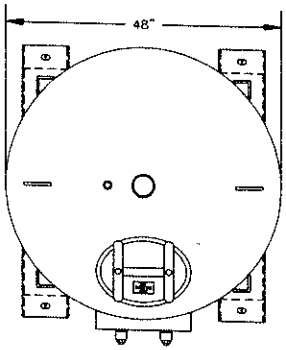
USFILTER/WESTATES
RED BLUFF, CA
1-800-795-2664

B.7-3

PROJECT	DRAWING	SHEET	REV
	2PV20002inMani	1 OF 1	

STD: 2-0600-8X11A

INTR_REF_NO



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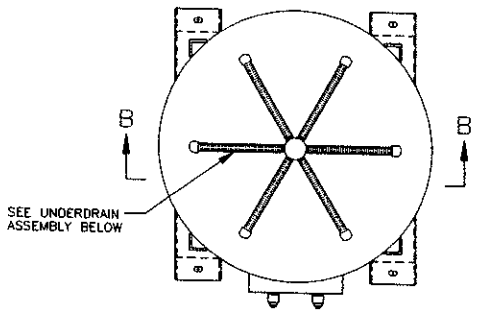
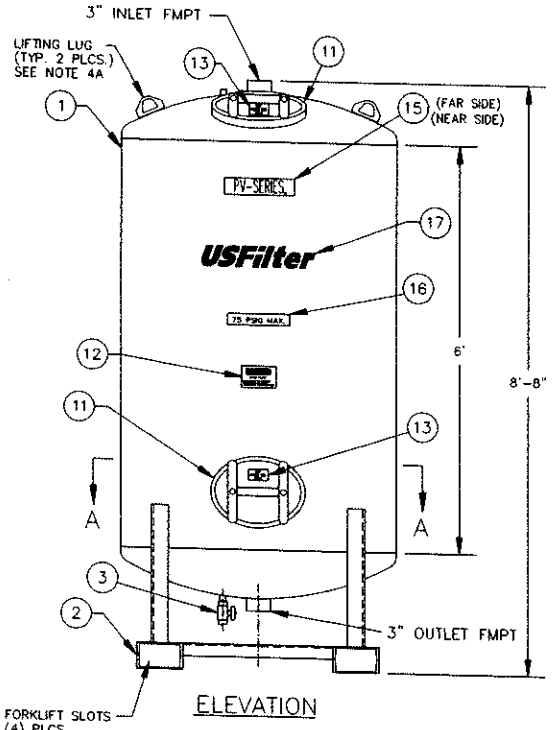
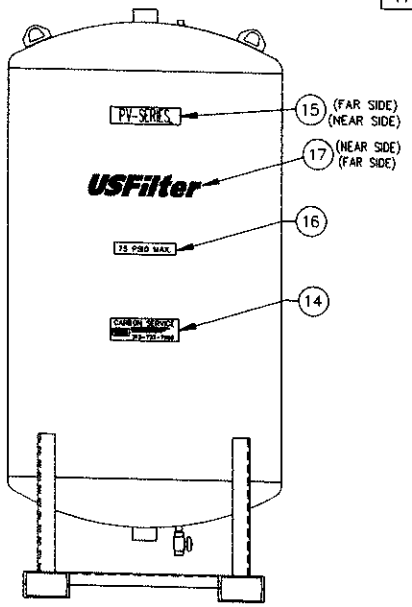


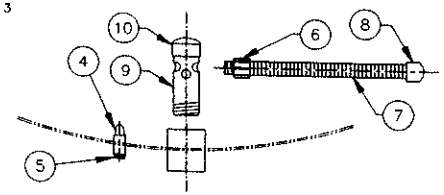
SECTION "A-A"



ELEVATION



REAR ELEVATION



LIST OF COMPONENTS

ITEM	QTY	DESCRIPTION	PART NUMBER
1		TANK ASSEMBLY DWG. # PV2000SHEET2	SEE SHEET 2
2		SKID ASSEMBLY DWG. # PV2000SHEET3	SEE SHEET 3
3	1	BRONZE BALL VALVE, 3/4"	1003
4	1	POLY SCREEN ORTHOS PART# NS R-3/4", MPT	N/A
5	1	CLOSE NIPPLE, SCHD 40 304 SS, 3/4"	N/A
6	6	MALE ADAPTER, SCH 80 PVC, 1"	U4001
7	6	PIPE, SLOTTED SCH 80 PVC, 1" x 15" LG	U4003
8	6	CAP, SCH 80 PVC, SLIP, 1"	N/A
9	1	UNDERDRAIN HUB, 3" DIA x 10 1/2" LG, SCH 80 PVC	N/A
10	1	CAP, SCH 80 PVC, SLIP, 3"	N/A
11	2	MANWAY ASSEMBLY, 12" x 16"	M3001
12	1	PLATE, I.D. & SERIAL NUMBER	N/A
13	2	DECAL, "FOR WATER USE ONLY", 2 1/2" x 4 1/4"	N/A
14	1	DECAL, "CARBON SERVICE" WHITE MYLAR W/BLUE LETTERS, 4" x 12"	N/A
15	2	DECAL, "PV-SERIES", WHITE MYLAR	N/A
16	2	DECAL, "75 PSIG MAX", WHITE MYLAR	N/A
17	2	DECAL, "USFILTER/WESTATES" WHITE MYLAR W/BLUE LETTERS	N/A

NOTES:

1. DESIGN DATA:
   48" DIAMETER PRESSURE VESSEL-75 PSIG(MAX)
   @ 150F-NOT ASME CODE STAMPED
   FOR WATER USE ONLY
   MAXIMUM FLOW RATE: 100 GPM
   MAXIMUM CARBON CAPACITY: 2000 LBS. ACTIVATED CARBON

2. MATERIAL:
   HEADS: STD. F & D NON CODE 3/16" THICKNESS C.S.
   SHELL: 3/16" THK. 48" OD x 72" LONG C.S.
   SKID: SA 36-HR

3. SURFACE PREPARATION:
   INTERIOR:
   SANDBLAST: SSPC-SP-5 WHITE METAL
   ABRASIVE: GARNET OR GRIT - PROFILE: 1.5-2 MILS
   COATING: 3M BRAND SCOTCHKOTE 134
   THICKNESS: 10-15 DFMT - COLOR: GREEN
   EXTERIOR:
   SANDBLAST: SSPC-SP-10 NEAR WHITE METAL
   ABRASIVE: GARNET OR GRIT - PROFILE: 1.5-2 MILS
   PRIMER COAT: RUST PREVENTATIVE EPOXY PRIMER (SHERWIN WILLIAMS)
   THICKNESS: 4-6 DFMT - COLOR: RED
   FINISH COAT: HIGH BUILD POLYURETHANE (SHERWIN WILLIAMS)
   THICKNESS: 3-4 DFMT - COLOR: BLUE (FED. I.D.#15052)

4. LIFTING REQUIREMENTS:
   5,200 LBS. MINIMUM RATING.
   EST. WEIGHTS:
   1190 LBS. - EMPTY VESSEL
   3190 LBS. - WITH CARBON
   7500 LBS. - OPERATING

DESIGNER	DATE
AJA	11-7-02
CHECKER	DATE
ENGINEER	DATE
MANAGER	DATE
FILE:	
SCALE: NONE	

TITLE: PV2000
GENERAL ASSEMBLY

CLIENT

USFilter
USFILTER/WESTATES
RED BLUFF, CA
1-800-795-2664

PROJECT	DRAWING	SHEET	REV
	PV2000SHEET1	1 OF 5	

87-4

Exhibit C – Dewatering Schedule

Individual Authorization Application for Construction Dewatering
4700 Brooklyn Ave NE, Seattle, WA

A dewatering schedule is not required because construction dewatering is not expected to be needed for longer than six months.

D. Heffner
Aspect Consulting, LLC
11/11/16

Exhibit D – Description of Contamination Sources and Chemical Characteristics

Individual Authorization Application for Construction Dewatering
4700 Brooklyn Ave NE, Seattle, WA

The primary source of groundwater contamination was retail gasoline station operations, which occurred on the site from before 1920 through October 2016. A possible secondary source of groundwater contamination was a dry cleaner formerly located at the northwest corner of the intersection of NE 47th St and Brooklyn Ave NE.

Groundwater quality was primarily evaluated through the collection of groundwater samples from 16 on-property monitoring wells (MW-1 through MW-16). Figure D-1 is a site plan that shows the locations of the monitoring wells. Groundwater samples were collected for laboratory analysis between January 1990 and January 2016. Results are summarized in Tables D-1 through D-3.

Separate-phase petroleum hydrocarbon product has been observed floating on groundwater in several of the monitoring wells, at measured thicknesses up to 0.98 feet (in Well MW-10 on 11/21/14). All groundwater wells were sampled in November 2016 and the maximum concentrations of individual constituents detected are as follows:

<u>Gasoline-Range Petroleum Hydrocarbons</u>

- Benzene – 5,500 micrograms per liter* (ug/L) (MW-12)
- Toluene – 6,300 ug/L* (MW-12)
- Ethylbenzene – 2,300 ug/L* (MW-12)
- Total Xylenes – 14,100 ug/L* (MW-12)

<u>Gasoline Additives</u>

- MTBE – 1.8 ug/L (MW-04)
- Dissolved Lead – 14.2 ug/L (MW-11)

<u>Chlorinated Volatile Organic Compounds (cVOCs)</u>

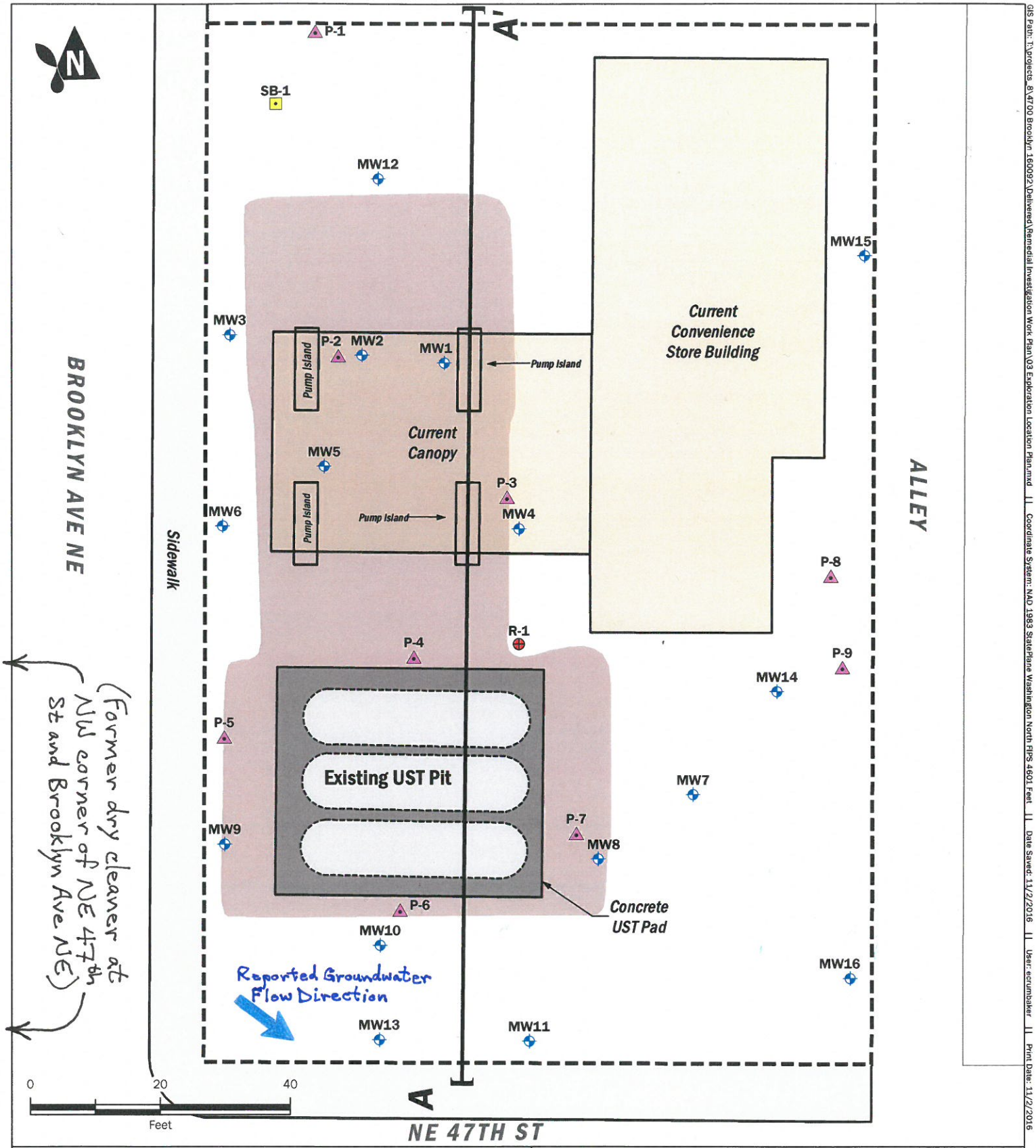
- cis-1,2-Dichloroethene – 15 ug/L (MW-9 and MW-13)
- Vinyl Chloride – 0.22 ug/L (MW-13)

* Exceeds KCIW Discharge Screening Levels for Volatile Organic Compounds

Exhibit D Figure and Tables:

Figure D-1 Site Plan Showing Groundwater Sampling Locations
Table D-1 Groundwater Quality Data, November 2016
Table D-2 Groundwater Quality Data, 1990 to 2014

D. Heffner
Aspect Consulting, LLC
3/13/17



Site Plan Showing Groundwater Sampling Locations

4700 Brooklyn Ave NE
Seattle, Washington

Aspect Consulting	NOV-2016	BY: DLC / RAP	FIGURE NO. 3 D-1
	PROJECT NO. 160092	REVISED BY: EAC/SCC	

TABLE D-1, Groundwater Quality Data, Nov. 2016

Project #160092 - 4700 Brooklyn Avenue NE
Seattle, WA

	Proposed Cleanup Levels	MW-02 11/21/2016	MW-03 11/21/2016	MW-3D 11/21/2016	MW-04 11/21/2016	MW-05 11/21/2016	MW-06 11/21/2016	MW-07 11/22/2016	MW-09 11/22/2016	MW-11 11/22/2016	MW-12 11/22/2016	MW-13 11/22/2016	MW-14 11/21/2016	MW-15 11/22/2016	MW-16 11/22/2016
Total Petroleum Hydrocarbons in ug/L															
Gasoline Range Organics	800	< 100 U	**110**	**120**	**780**	< 100 U	< 100 U	< 100 U	**23,000**	**55,000**	**120,000**		< 100 U	< 100 U	**2,300**
Diesel Range Organics	500	**58 X**	**170 X**	**120 X**	**810**	< 50 U	< 50 U	**200 X**	**3,500 X**	**4,500 X**	**8,800 X**		**110 X**	< 60 U	**660 X**
Motor Oil Range Organics	500	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U		< 250 U	< 300 U	< 250 U
Metals in ug/L															
Lead (Dissolved)	15	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	**17.2 J**	**2.89 J**		< 1 UJ	< 1 UJ	< 1 UJ
Volatile Organic Compounds in ug/L															
Benzene	5	< 0.35 U	< 0.35 U	< 0.35 U	< 0.35 U	< 0.35 U	< 0.35 U	< 0.35 U	**940**	**90**	**5,500**		< 0.35 U	< 0.35 U	**77**
Toluene	1,000	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	**740**	**530**	**6,300**		< 1 U	< 1 U	**2.6**
Ethylbenzene	700	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	**420**	**1,500**	**2,300**		< 1 U	< 1 U	**100**
m,p-Xylenes		< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	**660**	**5,800**	**10,000**		< 2 U	< 2 U	**5.3**
o-Xylene		< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	**110**	**1,300**	**4,100**		< 1 U	< 1 U	**1.1**
Total Xylenes	1,000	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	**770**	**7,100**	**14,100**		< 2 U	< 2 U	**6.4**
Methyl tert-butyl ether (MTBE)	20	< 1 U	< 1 U	< 1 U	**1.8**	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U		< 1 U	< 1 U	< 1 U
Tetrachloroethene (PCE)	5								< 1 U	< 1 U		< 1 U			
Trichloroethene (TCE)	5								< 1 U	< 1 U		< 1 U			
1,1-Dichloroethene	400								< 1 U	< 1 U		< 1 U			
cis-1,2-Dichloroethene (DCE)	16								**15**	**9.7**		**15**			
trans-1,2-Dichloroethene	160								< 1 U	< 1 U		**1**			
Vinyl Chloride	0.2								< 0.2 U	< 0.2 U		**0.22**			
1,1,1-Trichloroethane	200								< 1 U	< 1 U		< 1 U			
1,1-Dichloroethane	7.68								< 1 U	< 1 U		< 1 U			
1,2-Dichloroethane (EDC)	5								**21**	< 1 U		< 1 U			
Chloroethane									< 1 U	< 1 U		< 1 U			
Methylene Chloride	5								< 5 U	< 5 U		< 5 U			

Notes
Groundwater samples were not collected from MW-1, MW-8, and MW-10. MW-1 casing bends to the east. MW-8 was dry. MW-10 had measureable product
MW-13 was only samples for chlorinated VOCs due to the presence of measureable product.
Bold indicates detected analyte.
Shading indicates detection above proposed cleanup level.
J - Analyte was positively identified. The reported result is an estimate.
U - Analyte was not detected at or above the reported result.
UJ - Analyte was not detected at or above the reported estimate
X - The sample chromatographic pattern does not resemble the fuel standard used for quantitation by the laboratory.

TABLE D-2, Groundwater Quality Data, 1990 - 2014

GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS[1]
CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-1																
12/17-18/09		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
3/17/10		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
6/22-23/10		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
9/13/10		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
12/20/10		--	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--	--	--
6/16/11		--	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--	--	--
9/22/11		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
1/14/12		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
3/31/12		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
6/2/12		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
9/30/12		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
12/15/12		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
3/16/13		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
7/20/13		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
9/28/13		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
12/7/13		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
3/15/14		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
6/22/14		--	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
MW-2																
1/22/90		100.05	--	--	--	--	--	--	25	**1,100**	**1,090**	161	**1,120**	--	--	--
4/12/91		100.05	--	--	--	--	--	--	**3,100**	**100**	540	140	260	--	--	--
6/28/91		100.05	--	--	--	--	--	--	**7,000**	**300**	**1,100**	500	**1,300**	--	--	--
9/18/91		100.05	--	--	--	--	--	--	**4,800**	**150**	49	280	660	--	--	--
12/3/91		100.05	--	--	--	--	--	--	**9,000**	**290**	**1,300**	540	**1,500**	--	--	--
2/25/92		100.05	--	--	--	--	--	--	**1,600**	**42**	170	120	310	--	--	--
5/15/92		100.05	--	--	--	--	--	--	410	**19**	40	40	70	--	--	--
7/31/92		100.05	--	16.45	--	83.60	--	--	--	--	--	--	--	--	--	--
8/18/92		100.05	--	16.55	--	83.50	--	--	**10,000**	**160**	890	**750**	**1,600**	--	--	--
9/25/92		100.05	--	16.90	--	83.15	--	--	--	--	--	--	--	--	--	--
2/23/93		100.05	--	16.68	--	83.37	--	--	750	**14**	22	62	100	--	--	--
5/12/93		100.05	--	16.25	--	83.80	--	--	ND	ND	ND	ND	ND	--	--	--
8/18/93		100.05	--	15.86	--	84.19	--	--	ND	ND	1.1	6.7	3.5	--	--	--

TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS[1]
CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-2 (cont)																
11/10/93		100.05	--	16.15	--	83.90	--	--	ND	ND	ND	2.5	ND	--	--	--
2/3/94		100.05	--	15.79	--	84.26	--	--	ND	ND	ND	4.5	0.5	--	--	--
4/26/94		100.05	--	15.42	--	84.63	--	--	ND	0.6	ND	9.9	3.4	--	--	--
7/20/94		100.05	--	16.75	--	83.30	--	--	ND	ND	ND	0.6	ND	--	--	--
10/18/94		100.05	--	18.16	--	81.89	--	--	180	4.3	4.0	24	13	--	--	--
2/1/95		100.05	--	18.45	--	81.60	--	--	360	**7.1**	6.7	35	39	--	--	--
7/12/95		100.05	--	18.22	--	81.83	--	--	ND	ND	ND	ND	ND	--	--	--
1/4/96		100.05	--	17.81	--	82.24	--	--	ND	0.63	ND	ND	ND	--	--	--
1/7/97		100.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/12/98		100.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/15/04	NP	100.05	--	17.06	--	82.99	--	--	170	**9.4**	1.4	11	6.8	**30/24**[6]	--	--
NOT MONITORED/SAMPLED			--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/17-18/09		100.05	--	16.24	--	83.81	32	<68	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/17/10		100.05	--	15.90	--	84.15	<31	<71	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
06/22-23/10		100.05	--	15.24	--	84.81	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/13/10		100.05	--	17.34	--	82.71	<29	72	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/20/10		100.05	--	17.58	--	82.47	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
6/16/11		100.05	--	17.48	--	82.57	51	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/22/11		100.05	--	18.25	--	81.80	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
1/14/12		100.05	--	18.60	--	81.45	<29	<68	**1,300**	1.7	20	9.5	110	<2.5	--	--
3/31/12		100.05	--	19.70	--	80.35	NOT SAMPLED DUE TO INSUFFICIENT WATER					--	--	--	--	--
6/2/12		100.05	--	17.80	--	82.25	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/30/12		100.05	--	19.42	--	80.63	NOT SAMPLED DUE TO INSUFFICIENT WATER					--	--	--	--	--
12/15/12		100.05	--	19.44	--	80.61	NOT SAMPLED DUE TO INSUFFICIENT WATER					--	--	--	--	--
3/16/13		100.05	--	19.78	--	80.27	NOT SAMPLED DUE TO INSUFFICIENT WATER					--	--	--	--	--
7/21/13		100.05	--	18.14	--	81.91	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/28/13		100.05	--	18.65	--	81.40	<29	<68	57	<0.5	0.6	<0.5	3.7	<2.5	--	--
12/7/13		100.05	--	18.85	--	81.20	--	--	400	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/15/14		100.05	--	18.62	--	81.43	<30	<70	70	<0.5	1.9	1.1	10	<2.5	--	--
6/22/14		100.05	--	17.96	--	82.09	<29	<68	110	<0.5	<0.5	<0.5	4.2	<2.5	--	--

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Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-3																
1/22/90		101.25	--	--	--	--	--	--	**85,000**	**1,380**	**14,100**	**2,060**	**12,800**	--	--	--
4/12/91		101.25	--	--	--	--	--	--	**2,500**	3.6	39	18	69	--	--	--
6/28/91		101.25	--	--	--	--	--	--	**6,600**	**63**	680	210	870	--	--	--
9/18/91		101.25	--	--	--	--	--	--	**4,900**	ND	82	86	300	--	--	--
12/3/91		101.25	--	--	--	--	--	--	**17,000**	**170**	**2,200**	710	**2,800**	--	--	--
2/25/92		101.25	--	--	--	--	--	--	**7,900**	**25**	150	210	920	--	--	--
5/15/92		101.25	--	--	--	--	--	--	**9,800**	**90**	**1,100**	260	**1,300**	--	--	--
7/31/92		101.25	--	15.81	--	85.44	--	--	--	--	--	--	--	--	--	--
8/18/92		101.25	--	15.94	--	85.31	--	--	**24,000**	**290**	**4,200**	**7,200**	**3,800**	--	--	--
9/25/92		101.25	--	16.55	--	84.70	--	--	--	--	--	--	--	--	--	--
2/24/93		101.25	--	16.12	--	85.13	--	--	**8,400**	**48**	440	210	**1,300**	--	--	--
5/12/93		101.25	--	15.60	--	85.65	--	--	**4,700**	**130**	840	120	600	--	--	--
8/18/93		101.25	--	15.60	--	85.65	--	--	**7,300**	**130**	**1,000**	240	**1,100**	--	--	--
11/10/93		101.25	--	16.11	--	85.14	--	--	**14,000**	**260**	**1,900**	470	**2,400**	--	--	--
2/3/94		101.25	--	15.66	--	85.59	--	--	**8,000**	**78**	720	220	800	--	--	--
4/26/94		101.25	--	14.91	--	86.34	--	--	**2,900**	**9.6**	7.9	34	160	--	--	--
7/20/94		101.25	--	16.92	--	84.33	--	--	**17,000**	**360**	**3,500**	550	**2,400**	--	--	--
10/18/94		101.25	--	18.68	--	82.57	--	--	**46,000**	**230**	**6,700**	**1,200**	**6,100**	--	--	--
2/1/95		101.25	--	18.53	--	82.72	--	--	**56,000**	**160**	**6,500**	**1,300**	**7,700**	--	--	--
7/12/95		101.25	--	18.30	--	82.95	--	--	**83,000**	**230**	**12,000**	**2,200**	**14,000**	--	--	--
1/4/96		101.25	--	17.97	--	83.28	--	--	**38,000**	**110**	**1,600**	**1,600**	**7,200**	--	--	--
1/7/97		101.25	--	17.10	--	84.15	--	--	**25,000**	**80.8**	476	**1,150**	**3,660**	--	--	--
2/12/98		101.25	--	16.83	--	84.42	--	--	**18,200**	**94.3**	134	**966**	**2,810**	--	--	--
5/31/99	NP	101.25	--	17.00	--	84.25	--	--	**29,300**	**187**	644	**826**	**5,060**	--	--	--
6/8/00		101.25	--	17.82	--	83.43	--	--	**43,300**	**380**	838	**1,620**	**9,840**	ND	--	--
1/30/01		101.25	--	18.49	--	82.76	--	--	**31,300**	**380**	306	**1,380**	**3,240**	--	--	--
4/11/01		101.25	--	17.91	--	83.34	--	--	**12,100**	**59.6**	37.8	524	900	--	--	--
7/28/01		101.25	--	17.66	--	83.59	--	--	**40,900**	**561**	**1,960**	**1,720**	**10,400**	--	--	--
10/15/01		101.25	--	17.82	--	83.43	--	--	**43,200**	**623**	**1,650**	**1,680**	**10,400**	--	--	--
1/5/02		101.25	--	16.42	--	84.83	--	--	**5,060**	**39.6**	14.1	261	362	--	--	--
4/2/02	NP	101.25	--	16.54	--	84.71	--	--	**35,000**	**280**	820	**910**	**6,200**	<20	--	--

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GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS[1]
CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-3 (cont)																
7/11/02	NP	101.25	--	16.68	--	84.57	--	--	**48,000**	**560**	**1,100**	**1,100**	**6,900**	<20	--	--
10/10/02	NP	101.25	--	17.22	--	84.03	--	--	**50,000**	**630**	**1,100**	**1,300**	**8,400**	<100	--	--
1/10/03		101.25	INACCESSIBLE - CAR PARKED OVER WELL				--	--	--	--	--	--	--	--	--	--
4/21/03	NP	101.25	--	15.79	--	85.46	--	--	**17,000**	**280**	340	480	**2,600**	<20	--	--
6/26/03	NP	101.25	--	16.15	--	85.10	--	--	**34,000**	**470**	750	**940**	**6,200**	<50	--	--
10/14/03	NP	101.25	--	17.03	--	84.22	--	--	**56,000**	**810**	**1,100**	**1,400**	**8,700**	<50	--	--
1/7/04	NP	101.25	--	16.41	--	84.84	--	--	**13,000**	**160**	150	400	**1,300**	<10	--	--
4/21/04	NP	101.25	--	16.36	--	84.89	--	--	**1,500**	**72**	14	3.1	120	<10/<2[6]	--	--
7/1/04	NP	101.25	14.45	16.90	--	84.35	--	--	**26,000**	**540**	410	**750**	**3,700**	<50	--	--
10/15/04	NP	101.25	--	17.79	--	83.46	--	--	**26,000**	**520**	370	**920**	**3,600**	<100	--	--
1/5/05	NP	101.25	--	17.76	--	83.49	--	--	**9,000**	**180**	47	590	95	<10	--	--
8/4/05		101.25	--	17.71	--	83.54	--	--	--	--	--	--	--	--	--	--
7/26/06		101.25	--	16.87	--	84.38	--	--	--	--	--	--	--	--	--	--
7/19/07		101.25	--	17.75	--	83.50	--	--	--	--	--	--	--	--	--	--
7/23/08		101.25	--	17.69	--	83.56	--	--	--	--	--	--	--	--	--	--
7/13/09		101.25	--	16.40	--	84.85	--	--	--	--	--	--	--	--	--	--
12/17-18/09		101.25	--	16.82	--	84.43	170	<70	**880**	**25**	13	76	22	<2.5	--	--
3/17/10		101.25	--	16.38	--	84.87	33	<71	75	4.2	1.3	1.9	<1.5	6.2	--	--
06/22-23/10		101.25	--	15.91	--	85.34	73	<69	690	**15**	18	30	67	<20	--	--
9/13/10		101.25	--	17.79	--	83.46	40	73	**2,100**	**26**	21	110	150	<20	--	--
12/20/10		101.25	--	17.81	--	83.44	200	86	**2,300**	**34**	15	220	25	**85**	--	--
6/16/11		101.25	--	17.68	--	83.57	**540**	77	**2,200**	**55**	22	170	110	<50	--	--
9/23/11		101.25	--	18.70	--	82.55	170	<68	**8,100**	**210**	130	690	590	**79**	--	--
1/14/12		101.25	--	19.00	--	82.25	100	<69	**5,200**	**180**	81	630	130	**120**	--	--
3/31/12		101.25	--	18.25	--	83.00	120	<76	**1,700**	**30**	6.5	160	14	**73**	--	--
6/2/12		101.25	--	18.10	--	83.15	110	93	**4,200**	**68**	48	340	170	**73**	--	--
9/30/12		101.25	--	19.00	--	82.25	410	330	**5,600**	**200**	95	**710**	350	91/<5[6]	--	--
12/15/12		101.25	--	18.30	--	82.95	160	72	**2,400**	**46**	12	240	36	62/<3[6]	--	--
3/16/13		101.25	--	18.08	--	83.17	100	<69	**4,000**	**76**	35	420	170	<73	--	--
7/21/13		101.25	--	21.31	--	79.94	250	76	**8,000**	**210**	100	**840**	410	110/<1[6]	--	**58.9**
9/28/13		101.25	--	26.33	--	74.92	170	75	**6,900**	**260**	120	**920**	240	<130/<0.5[6]	--	**328**

TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS[1]
CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-3 (cont)																
12/7/13		101.25	--	19.45	--	81.80	150	<67	**11,000**	**210**	130	**1,200**	690	<140	--	--
3/15/14		101.25	--	18.80	--	82.45	110	<68	**2,200**	**27**	8.7	240	33	<21	--	8
6/22/14	NP	101.25	--	18.27	--	82.98	130	<67	**8,200**	**70**	58	640	530	<54/<0.5[6]	--	1.6
MW-4																
4/12/91		100.01	--	--	--	--	--	--	ND	**8,300**	**15,000**	**1,900**	**16,000**	--	--	--
6/28/91		100.01	--	--	--	--	--	--	**85,000**	**9,900**	**18,000**	**2,400**	**16,000**	--	--	--
6/28/91 (D)		100.01	--	--	--	--	--	--	**120,000**	**13,000**	**22,000**	**3,100**	**24,000**	--	--	--
9/18/91		100.01	--	--	--	--	--	--	**130,000**	**14,000**	**22,000**	**2,900**	**22,000**	--	--	--
9/18/91 (D)		100.01	--	--	--	--	--	--	**360,000**	**14,000**	**26,000**	**5,400**	**40,000**	--	--	--
12/3/91		100.01	--	--	--	--	--	--	**86,000**	**8,900**	**12,000**	**2,000**	**18,000**	--	--	--
2/25/92		100.01	--	--	--	--	--	--	**120,000**	**7,500**	**11,000**	**1,800**	**16,000**	--	--	--
2/25/92 (D)		100.01	--	--	--	--	--	--	**86,000**	**8,100**	**11,000**	**1,600**	**15,000**	--	--	--
5/15/92		100.01	--	--	--	--	--	--	**90,000**	**11,000**	**17,000**	**1,800**	**18,000**	--	--	--
5/15/92 (D)		100.01	--	--	--	--	--	--	**81,000**	**10,000**	**16,000**	**1,500**	**16,000**	--	--	--
7/31/92		100.01	--	16.25	--	83.76	--	--	--	--	--	--	--	--	--	--
8/18/92		100.01	--	16.32	--	83.69	--	--	**200,000**	**17,000**	**28,000**	**2,800**	**26,000**	--	--	--
8/18/92 (D)		100.01	--	16.50	--	83.51	--	--	**160,000**	**17,000**	**29,000**	**2,200**	**19,000**	--	--	--
9/25/92		100.01	--	16.52	--	83.49	--	--	--	--	--	--	--	--	--	--
2/24/93		100.01	--	16.03	--	83.98	--	--	**290,000**	**22,000**	**42,000**	**4,700**	**27,000**	--	--	--
5/12/93		100.01	--	14.91	--	85.10	--	--	**160,000**	**13,000**	**27,000**	**2,400**	**22,000**	--	--	--
8/18/93		100.01	--	16.35	--	83.66	--	--	**150,000**	**10,000**	**22,000**	**2,500**	**18,000**	--	--	--
11/10/93		100.01	--	15.89	--	84.12	--	--	**170,000**	**13,000**	**26,000**	**3,400**	**23,000**	--	--	--
2/3/94		100.01	--	15.53	--	84.48	--	--	**190,000**	**9,800**	**21,000**	**2,400**	**15,000**	--	--	--
7/20/94		100.01	--	16.39	--	83.62	--	--	**170,000**	**12,000**	**26,000**	**3,000**	**20,000**	--	--	--
10/18/94		100.01	--	18.03	0.04	82.01	--	--	--	--	--	--	--	--	--	--
2/1/95		100.01	--	17.90	--	82.11	--	--	**100,000**	**2,100**	**7,100**	**1,400**	**14,000**	--	--	--
7/12/95		100.01	--	17.60	--	82.41	--	--	**970,000**	**5,800**	**9,600**	**3,300**	**42,000**	--	--	--
1/4/96		100.01	--	17.36	--	82.65	--	--	**1,400,000**	**300**	**1,100**	570	**8,600**	--	--	--
1/7/97		100.01	--	17.60	--	82.41	--	--	--	--	--	--	--	--	--	--
2/12/98		100.01	--	16.65	--	83.36	--	--	**24,400**	**917**	202	385	**3,390**	--	--	--
5/31/99	NP	100.01	--	16.84	--	83.17	--	--	**32,600**	**1,660**	217	566	**4,390**	--	--	--
6/8/00		100.01	--	17.50	<0.01	82.51	--	--	**58,500**	**971**	206	**1,120**	**7,570**	ND	--	--

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CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-4 (cont)																
1/30/01		100.01	--	18.10	--	81.91	--	--	**59,800**	**1,800**	140	**901**	**4,450**	--	--	--
4/11/01		100.01	--	17.91	--	82.10	--	--	**56,800**	**1,450**	105	**984**	**4,560**	--	--	--
7/28/01		100.01	--	17.88	--	82.13	--	--	**91,600**	**1,480**	142	**1,240**	**5,930**	--/<50[6]	--	--
10/15/01		100.01	--	18.06	--	81.95	--	--	**65,900**	**1,460**	116	**944**	**3,890**	--/40.4[6]	--	--
1/5/02		100.01	--	17.04	--	82.97	--	--	**25,600**	**247**	52.3	483	**2,030**	--/<50.0[6]	--	--
4/2/02		100.01	INACCESSIBLE - CAR PARKED OVER WELL				--	--	--	--	--	--	--	--	--	--
7/11/02	NP	100.01	--	16.88	--	83.13	--	--	**34,000**	**1,000**	59	450	**1,400**	**130/110[6]**	--	--
10/10/02	NP	100.01	--	17.28	--	82.73	--	--	**31,000**	**1,200**	49	620	**1,700**	**170/110[6]**	--	--
1/10/03		100.01	INACCESSIBLE - CAR PARKED OVER WELL				--	--	--	--	--	--	--	--	--	--
4/21/03	NP	100.01	--	15.78	--	84.23	--	--	**11,000**	**120**	6.0	220	520	<20	--	--
6/26/03	NP	100.01	--	15.96	--	84.05	--	--	**8,000**	**330**	12	160	510	**150/160[6]**	--	--
10/14/03	NP	100.01	--	16.56	--	83.45	--	--	**13,000**	**550**	17	280	690	**150/140[6]**	--	--
1/7/04	NP	100.01	--	16.02	--	83.99	--	--	**12,000**	**370**	8.9	24	650	**62/47[6]**	--	--
4/21/04	NP	100.01	--	15.83	--	84.18	--	--	**1,300**	**69**	0.7	3.2	24	**78/78[6]**	--	--
7/1/04	NP	100.01	--	16.02	--	83.99	--	--	**980**	**90**	0.7	3.9	15	**67/70[6]**	--	--
10/15/04	NP	100.01	--	16.41	--	83.60	--	--	**9,900**	**530**	9.0	240	510	**140/110[6]**	--	--
1/5/05	NP	100.01	--	16.14	--	83.87	--	--	**14,000**	**630**	9.8	330	660	**130/110[6]**	--	--
8/4/05	NP	100.01	--	16.36	--	83.65	--	--	**9,600**	**420**	6.3	260	370	**99**	--	--
7/26/06	NP	100.01	--	15.98	--	84.03	--	--	330	**21**	<0.5	<0.5	2.5	12	--	--
7/19/07	NP	100.01	--	16.30	--	83.71	--	--	350	**13**	<0.5	<0.5	2.6	6.3	--	--
7/23/08	NP	100.01	--	16.36	--	83.65	--	--	**1,700**	**99**	1.9	7	41	8.5	--	--
7/13/09	NP	100.01	--	15.07	--	84.94	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/17-18/09		100.01	--	15.16	--	84.85	**3,300**	<680	**3,300**	**19**	0.9	1.9	6.2	<2.5	--	--
3/17/10		100.01	--	14.95	--	85.06	**20,000**	**4,600**	**930**	**10**	1.9	1.4	2.2	3.5	--	--
06/22-23/10		100.01	--	14.21	--	85.80	120	<68	140	3.8	<2.0	2.3	1.9	<2.5	--	--
9/13/10		100.01	--	7.31	--	92.70	**2,900**	400	**3,400**	**130**	1.3	58	34	8.1	--	--
12/20/10		100.01	--	17.69	--	82.32	**130,000**	**31,000**	**2,200**	**150**	5.6	28	18	41	--	--
6/16/11		100.01	--	17.60	--	82.41	**16,000**	**2,300**	**3,000**	**140**	5.1	21	<15	15	--	--
9/23/11		100.01	--	18.30	--	81.71	**2,800**	<330	**3,700**	**290**	<10	64	<50	16	--	--
1/14/12		100.01	--	18.65	--	81.36	**7,900**	**930**	**2,900**	**170**	4.6	69	69	19	--	--
3/31/12		100.01	--	18.05	--	81.96	**6,000**	**800**	**1,500**	**44**	3.7	25	15	15	--	--

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CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
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Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-4 (cont)																
6/2/12		100.01	--	17.85	--	82.16	**510**	160	**1,800**	**79**	3.1	30	20	14	--	--
9/30/12		100.01	--	18.52	--	81.49	**4,600**	**650**	**2,000**	**230**	<4.0	100	28	13/12[6]	--	--
12/15/12		100.01	--	18.05	--	81.96	**2,300**	130	**800**	**39**	<2.0	37	<5.0	13/11[6]	--	--
3/16/13		100.01	--	17.86	--	82.15	**4,000**	420	**2,200**	**75**	4.2	25	19	9.6/9[6]	--	--
7/21/13		100.01	--	18.20	--	81.81	**5,900**	**700**	**2,200**	**150**	<5.0	83	<25	12/10[6]	--	--
9/28/13		100.01	--	18.70	--	81.31	**4,400**	**590**	**5,000**	**320**	3.3	200	63	<17/8[6]	--	--
12/7/13		100.01	--	18.88	--	81.13	**2,600**	290	**3,900**	**140**	<4.0	91	23	11/8[6]	--	--
3/15/14		100.01	--	18.64	--	81.37	**3,700**	220	**1,000**	**17**	<2.0	17	<5.0	7.3/6[6]	--	--
6/22/14	NP	100.01	--	17.99	--	82.02	240	<67	**840**	**53**	0.9	12	2.4	6.1/6[6]	--	--
MW-5																
2/19/90		100.75	--	--	--	--	--	--	ND	ND	5.0	ND	22	--	--	--
4/12/91		100.75	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
6/28/91		100.75	--	--	--	--	--	--	89	ND	1.9	0.96	6.1	--	--	--
9/18/91		100.75	--	--	--	--	--	--	68	ND	ND	1.1	ND	--	--	--
12/3/91		100.75	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
2/25/92		100.75	--	--	--	--	--	--	92	ND	ND	15	ND	--	--	--
5/15/92		100.75	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
7/31/92		100.75	--	16.02	--	84.73	--	--	--	--	--	--	--	--	--	--
8/18/92		100.75	--	16.09	--	84.66	--	--	ND	ND	ND	ND	ND	--	--	--
9/25/92		100.75	--	16.42	--	84.33	--	--	--	--	--	--	--	--	--	--
2/23/93		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/12/93		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/18/93		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/10/93		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/3/94		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/26/94		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/20/94		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/18/94		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/1/95		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/12/95		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/4/96		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/7/97		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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4700 Brooklyn Avenue
Seattle, Washington
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Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-5 (cont)																
2/12/98		100.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOT MONITORED/SAMPLED			--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/17-18/09		100.75	--	16.09	--	84.66	50	<68	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/17/10		100.75	--	15.76	--	84.99	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
06/22-23/10		100.75	--	15.11	--	85.64	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/13/10		100.75	--	17.63	--	83.12	<31	<71	52	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/20/10		100.75	--	17.75	--	83.00	<31	110	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
6/16/11		100.75	--	17.73	--	83.02	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/22/11		100.75	--	18.60	--	82.15	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
1/14/12		100.75	--	18.90	--	81.85	<29	<67	52	<0.5	1.3	0.7	7.5	<2.5	--	--
3/31/12		100.75	--	18.20	--	82.55	<31	<73	<50	<0.5	0.6	<0.5	1.9	<2.5	--	--
6/2/12		100.75	--	18.05	--	82.70	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/30/12		100.75	--	18.82	--	81.93	<29	90	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/15/12		100.75	--	18.20	--	82.55	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/16/13		100.75	--	18.04	--	82.71	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
7/21/13		100.75	--	18.47	--	82.28	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/28/13		100.75	--	19.07	--	81.68	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/7/13		100.75	--	21.32	--	79.43	NOT SAMPLED DUE TO INSUFFICIENT WATER					--	--	--	--	--
3/15/14		100.75	--	18.78	--	81.97	<30	<69	<50	<0.5	0.5	<0.5	2.9	<2.5	--	--
6/22/14		100.75	--	18.26	--	82.49	<29	<67	<50	<0.5	0.5	<0.5	<1.5	<2.5	--	--
MW-6																
2/19/90		100.93	--	--	--	--	--	--	**38,200**	ND	74	259	**2,430**	--	--	--
4/12/91		100.93	--	--	--	--	--	--	ND	ND	1.8	4.8	53	--	--	--
6/28/91		100.93	--	--	--	--	--	--	390	**1,100**	**5,300**	**860**	**47,000**	--	--	--
9/18/91		100.93	--	--	--	--	--	--	**1,600**	3.7	ND	15	130	--	--	--
12/3/91		100.93	--	--	--	--	--	--	**2,000**	3.7	1.8	19	130	--	--	--
2/25/92		100.93	--	--	--	--	--	--	**4,100**	**8.9**	2.9	44	320	--	--	--
5/15/92		100.93	--	--	--	--	--	--	ND	ND	ND	ND	8.0	--	--	--
7/31/92		100.93	--	15.86	--	85.07	--	--	--	--	--	--	--	--	--	--
8/18/92		100.93	--	15.95	--	84.98	--	--	**3,300**	3.7	0.84	17	110	--	--	--
9/25/92		100.93	--	16.26	--	84.67	--	--	--	--	--	--	--	--	--	--
2/23/93		100.93	--	16.17	--	84.76	--	--	**1,900**	ND	0.8	5.2	67	--	--	--

TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS[1]
CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-6 (cont)																
5/12/93		100.93	--	15.63	--	85.30	--	--	**1,600**	2.1	1.2	8.5	74	--	--	--
8/18/93		100.93	--	15.37	--	85.56	--	--	ND	ND	ND	ND	1.0	--	--	--
11/10/93		100.93	--	15.83	--	85.10	--	--	**1,300**	2.3	2.0	2.9	36	--	--	--
2/3/94		100.93	--	15.45	--	85.48	--	--	740	2.8	5.4	2.6	23	--	--	--
4/26/94		100.93	--	15.19	--	85.74	--	--	300	ND	ND	ND	2.4	--	--	--
7/20/94		100.93	--	16.94	--	83.99	--	--	**2,500**	ND	1.1	5.6	38	--	--	--
10/18/94		100.93	--	18.68	--	82.25	--	--	440	ND	1.0	1.3	2.5	--	--	--
2/1/95		100.93	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
7/12/95		100.93	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
1/4/96		100.93	--	17.94	--	82.99	--	--	**9,400**	**11**	90	120	770	--	--	--
1/7/97		100.93	--	16.90	--	84.03	--	--	**1,440**	2.85	5.05	10.4	56.7	--	--	--
2/12/98		100.93	--	16.93	--	84.00	--	--	308	**6.43**	1.63	ND	3.53	--	--	--
5/31/99	NP	100.93	--	17.17	--	83.76	--	--	**1,660**	**116**	6.98	2.21	37.5	--	--	--
6/8/00		100.93	--	17.90	--	83.03	--	--	**1,970**	**61.9**	6.96	23.8	122	ND/ND	--	--
1/30/01		100.93	--	18.51	--	82.42	NOT SAMPLED DUE TO INSUFFICIENT WATER					--	--	--	--	--
4/11/01		100.93	--	18.21	--	82.72	--	--	**10,800**	**190**	20.0	45.0	262	--	--	--
7/28/01		100.93	--	18.09	--	82.84	--	--	**4,600**	**264**	7.94	23.1	91.2	--	--	--
10/15/01		100.93	--	18.28	--	82.65	--	--	**6,890**	**267**	13.8	45.9	203	--	--	--
1/5/02		100.93	--	17.09	--	83.84	--	--	**3,500**	**213**	7.25	22.9	109	--	--	--
NOT MONITORED/SAMPLED			--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/17-18/09		100.93	--	16.03	--	84.90	99	<72	460	<0.5	<0.5	2.2	15	<2.5	--	--
3/17/10		100.93	--	15.69	--	85.24	56	<71	590	0.9	0.5	2.2	17	<2.5	--	--
06/22-23/10		100.93	--	14.99	--	85.94	31	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/13/10		100.93	--	17.64	--	83.29	240	<71	**980**	1.9	1.1	2.3	23	<2.5	--	--
12/20/10		100.93	--	17.74	--	83.19	350	<72	**1,300**	3.5	1.8	4.8	37	2.8	--	--
6/16/11		100.93	--	17.75	--	83.18	260	160	600	1.5	1	2.7	20	<2.5	--	--
9/22/11		100.93	--	18.65	--	82.28	OBSTRUCTION IN WELL AT 19 FT				--	--	--	--	--	--
1/14/12		100.93	--	21.10	--	79.83	NOT SAMPLED DUE TO INSUFFICIENT WATER					--	--	--	--	--
3/31/12		100.93	--	18.30	--	82.63	<29	<68	560	1.3	1.2	1.3	9.4	<2.5	--	--
6/2/12		100.93	--	18.10	--	82.83	<29	<67	**1,300**	1.8	1.3	3.1	18	<2.5	--	--
9/30/12		100.93	--	18.92	--	82.01	OBSTRUCTION IN WELL AT 19 FT				--	--	--	--	--	--

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Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-6 (cont)																
12/15/12		100.93	--	18.22	--	82.71	<29	<67	560	0.6	0.7	1.7	12	<2.5	--	--
3/16/13		100.93	--	18.06	--	82.87	<29	<67	110	0.5	1.9	0.5	4.8	<2.5	--	--
7/21/13		100.93	--	18.54	--	82.39	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/28/13		100.93	--	19.05	--	81.88	<29	<68	81	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/7/13		100.93	--	19.32	--	81.61	<29	<68	67	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/15/14		100.93	--	18.78	--	82.15	<29	<67	180	<0.5	<0.5	<0.5	3.5	<2.5	--	--
6/22/14		100.93	--	18.28	--	82.65	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
MW-7																
2/19/90		99.07	--	--	--	--	--	--	**526,000**	**3,280**	**8,170**	**1,210**	**8,010**	--	--	--
6/28/91		99.07	--	--	--	--	--	--	**30,000**	**760**	950	**4,600**	**8,500**	--	--	--
9/18/91		99.07	--	--	--	--	--	--	**11,000**	**280**	970	560	**2,800**	--	--	--
12/3/91		99.07	--	--	--	--	--	--	**9,400**	**250**	330	630	**2,600**	--	--	--
2/25/92		99.07	--	--	--	--	--	--	**3,800**	**210**	260	510	**2,200**	--	--	--
5/15/92		99.07	--	--	--	--	--	--	**9,000**	**170**	35	630	**2,900**	--	--	--
8/18/92		99.07	--	16.90	--	--	--	--	**28,000**	**190**	75	100	560	--	--	--
9/25/92		99.07	--	17.05	--	82.02	--	--	--	--	--	--	--	--	--	--
2/23/93		99.07	--	16.81	--	82.26	--	--	**32,000**	**160**	**1,500**	**800**	**6,300**	--	--	--
5/12/93		99.07	--	16.32	--	82.75	--	--	**24,000**	**160**	940	**890**	**5,200**	--	--	--
8/18/93		99.07	--	16.39	--	82.68	--	--	**27,000**	**79**	470	**750**	**6,500**	--	--	--
11/10/93		99.07	--	16.94	--	82.13	--	--	**14,000**	**36**	60	400	**3,800**	--	--	--
2/3/94		99.07	--	16.71	--	82.36	--	--	**3,800**	**7.5**	8.3	130	680	--	--	--
4/26/94		99.07	--	15.72	--	83.35	--	--	**10,000**	**48**	190	480	**1,900**	--	--	--
7/20/94		99.07	--	16.03	--	83.04	--	--	**14,000**	**26**	280	570	**2,900**	--	--	--
10/18/94		99.07	--	17.49	--	81.58	--	--	**6,200**	**11**	13	230	980	--	--	--
2/1/95		99.07	--	17.58	--	81.49	--	--	510	**9.5**	1.3	51	22	--	--	--
7/12/95		99.07	--	17.24	--	81.83	--	--	**8,600**	**30**	25	270	**1,300**	--	--	--
1/4/96		99.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/7/97		99.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/12/98		99.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/31/99		99.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/8/00		99.07	--	17.11	--	--	--	--	321	3.15	ND	63.6	5.66	ND	--	--
NOT MONITORED/SAMPLED			--	--	--	--	--	--	--	--	--	--	--	--	--	--

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4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-7 (cont)																
12/17-18/09		99.07	--	13.48	--	85.59	86	<68	330	0.7	<0.5	5.5	7.6	<2.5	--	--
3/17/10		99.07	--	13.35	--	85.72	33	73	670	**29**	1.1	7.4	9.9	<2.5	--	--
06/22-23/10		99.07	--	13.11	--	85.96	<31	<72	<50	1	<0.5	0.8	<1.5	<2.5	--	--
9/13/10		99.07	--	16.45	--	82.62	120	97	**960**	4	<0.5	9.6	8.2	<2.5	--	--
12/20/10		99.07	--	17.12	--	81.95	54	<75	170	2.6	<0.5	3.5	<1.5	<2.5	--	--
6/16/11		99.07	--	16.77	--	82.30	160	430	180	1.5	<0.5	0.8	<1.5	<2.5	--	--
9/23/11		99.07	--	17.58	--	81.49	100	440	210	2.3	<0.5	4.2	<1.5	<2.5	--	--
1/14/12		99.07	--	17.80	--	81.27	33	130	130	1.5	<0.5	3.2	<1.5	<2.5	--	--
3/31/12		99.07	--	17.50	--	81.57	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
6/2/12		99.07	--	17.10	--	81.97	44	170	100	1.3	<0.5	1.1	<1.5	<2.5	--	--
9/30/12		99.07	--	17.78	--	81.29	35	86	54	0.8	<0.5	1.3	<1.5	<2.5	--	--
12/15/12		99.07	--	17.42	--	81.65	51	<68	300	2.4	<0.5	5.7	2.3	<2.5	--	--
3/16/13		99.07	--	17.27	--	81.80	<30	<70	280	2.7	<0.5	5.8	<1.5	<2.5	--	--
7/21/13		99.07	--	17.22	--	81.85	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/28/13		99.07	INACCESSIBLE - CAR PARKED OVER WELL					--	--	--	--	--	--	--	--	--
12/7/13		99.07	--	20.33	--	78.74	NOT SAMPLED DUE TO INSUFFICIENT WATER					--	--	--	--	--
3/15/14		99.07	--	18.01	--	81.06	<29	<67	120	<0.5	<0.5	1.1	2.8	<2.5	--	--
6/22/14		99.07	--	17.48	--	81.59	<29	<68	83	0.9	<0.5	1.8	<1.5	<2.5	--	--
MW-8																
4/11/01		--	DRY	--	--	--	--	--	--	--	--	--	--	--		--
NOT MONITORED/SAMPLED			--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/17-18/09		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
3/17/10		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
06/22-23/10		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
9/13/10		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
12/20/10		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
6/16/11		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
9/22/11		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
1/14/12		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
3/31/12		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
6/2/12		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
9/30/12		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--

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CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
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Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-8 (cont)																
12/15/12		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
3/16/13		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
7/20/13		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
9/28/13		--	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--
12/7/13		--	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--	--	--
3/15/14		--	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--	--	--
6/22/14		--	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--	--	--
MW-9																
2/19/90		100.02	--	--	--	--	--	--	**99,600**	**181**	489	494	**4,290**	--	--	--
4/12/91		100.02	--	--	--	--	--	--	ND	ND	ND	180	930	--	--	--
6/28/91		100.02	--	--	--	--	--	--	**10,000**	**100**	160	570	**1,800**	--	--	--
9/18/91		100.02	--	--	--	--	--	--	**15,000**	**150**	260	**720**	**3,200**	--	--	--
12/3/91		100.02	--	--	--	--	--	--	**16,000**	**140**	290	**780**	**3,400**	--	--	--
2/25/92		100.02	--	--	--	--	--	--	**9,500**	**120**	220	640	**2,900**	--	--	--
5/15/92		100.02	--	--	--	--	--	--	**18,000**	**120**	210	660	**3,300**	--	--	--
7/31/92		100.02	--	15.86	--	84.16	--	--	--	--	--	--	--	--	--	--
8/18/92		100.02	--	15.93	--	84.09	--	--	**16,000**	**72**	120	560	**1,900**	--	--	--
9/25/92		100.02	--	16.14	--	83.88	--	--	--	--	--	--	--	--	--	--
2/23/93		100.02	--	15.87	--	84.15	--	--	**9,000**	**45**	120	390	**1,100**	--	--	--
5/12/93		100.02	--	15.44	--	84.58	--	--	**11,000**	**34**	58	280	910	--	--	--
8/18/93		100.02	--	15.21	--	84.81	--	--	**3,100**	**22**	47	94	500	--	--	--
11/10/93		100.02	--	15.85	--	84.17	--	--	**10,000**	**67**	150	470	**1,700**	--	--	--
2/3/94		100.02	--	15.63	--	84.39	--	--	**26,000**	**85**	340	**910**	**3,600**	--	--	--
4/26/94		100.02	--	14.98	--	85.04	--	--	**12,000**	**37**	73	200	750	--	--	--
7/20/94		100.02	--	15.91	--	84.11	--	--	**15,000**	**37**	110	360	**1,600**	--	--	--
10/18/94		100.02	--	16.91	--	83.11	--	--	**28,000**	**110**	350	**970**	**2,000**	--	--	--
2/1/95		100.02	--	16.86	--	83.16	--	--	**21,000**	**47**	230	570	**2,600**	--	--	--
7/12/95		100.02	--	16.50	--	83.52	--	--	**17,000**	**69**	130	480	**2,000**	--	--	--
1/4/96		100.02	--	16.00	--	84.02	--	--	**39,000**	**46**	140	420	**2,600**	--	--	--
1/7/97		100.02	15.12	15.12	Sheen	84.90	--	--	**31,600**	**47.7**	ND	25.2	112	--	--	--
2/12/98		100.02	--	15.87	--	84.15	--	--	ND	ND	ND	ND	ND	--	--	--
5/31/99	NP	100.02	--	16.03	--	83.99	--	--	ND	ND	ND	ND	ND	--	--	--

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Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-9 (cont)																
6/8/00		100.02	--	16.74	--	83.28	--	--	--	--	--	--	--	--	--	--
1/30/01		100.02	--	17.40	--	82.62	--	--	**307,000**	ND	ND	ND	ND	--	--	--
4/11/01		100.02	--	17.15	--	82.87	--	--	**43,000**	<50	289	**911**	**5,530**	--	--	--
7/28/01		100.02	--	17.18	--	82.84	--	--	**27,800**	**35.9**	290	**1,110**	**5,490**	--	--	--
10/15/01		100.02	--	17.54	--	82.48	--	--	**84,100**	<25.0	99.3	262	**2,290**	--	--	--
1/5/02		100.02	--	16.12	--	83.90	--	--	**9,020**	<5.00	10.0	103	850	--	--	--
NOT MONITORED/SAMPLED			--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/17-18/09		100.02	--	10.88	--	89.14	<29	<68	<50	**130**	3.4	0.7	2.2	<2.5	--	--
3/17/10		100.02	--	10.96	--	89.06	78	170	**13,000**	**610**	**1,600**	280	**1,500**	**73**	--	--
06/22-23/10		100.02	--	12.00	--	88.02	310	<70	**12,000**	**11**	15	150	**1,100**	<10	--	--
9/13/10		100.02	--	16.27	--	83.75	**990**	**800**	**2,900**	**53**	23	61	110	<10	--	--
12/20/10		100.02	--	16.45	--	83.57	150	<74	**4,000**	**51**	13	79	170	8.8	--	--
6/16/11		100.02	--	16.35	--	83.67	240	190	**1,600**	**41**	4.4	53	59	<10	--	--
9/23/11		100.02	--	17.25	--	82.77	200	<70	**4,200**	**88**	12	180	290	<20	--	--
1/14/12		100.02	--	17.55	--	82.47	330	<68	**5,800**	**120**	17	180	260	**36**	--	--
3/31/12		100.02	--	16.85	--	83.17	**1,300**	91	**7,900**	**140**	14	220	320	**24**	--	--
6/2/12		100.02	--	16.60	--	83.42	**1,100**	240	**8,900**	**120**	16	210	300	**26**	--	--
9/30/12		100.02	--	17.61	--	82.41	**1,200**	190	**7,800**	**130**	22	220	300	30/<3[6]	--	--
12/15/12		100.02	--	17.00	--	83.02	**4,000**	<69	**18,000**	**150**	25	420	930	34/<3[6]	--	--
3/16/13		100.02	--	16.86	--	83.16	**9,700**	**520**	**21,000**	**120**	20	330	700	32/<5[6]	--	--
7/20/13		100.02	17.41	17.43	0.02	82.61	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
9/28/13		100.02	17.90	18.58	0.68	81.98	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
12/7/13		100.02	17.94	19.72	1.78	81.72	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
3/15/14		100.02	17.66	18.99	1.33	82.09	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
6/22/14		100.02	16.93	17.34	0.41	83.01	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
MW-10																
2/19/90		99.18	--	--	--	--	--	--	**89,400**	**431**	136	505	**1,990**	--	--	--
4/12/91		99.18	--	--	--	--	--	--	**5,000**	**200**	56	350	**1,200**	--	--	--
6/28/91		99.18	--	--	--	--	--	--	**5,700**	**250**	48	330	910	--	--	--
9/18/91		99.18	--	--	--	--	--	--	**6,200**	**230**	370	300	580	--	--	--
12/3/91		99.18	--	--	--	--	--	--	560	**210**	59	290	870	--	--	--
2/25/92		99.18	--	--	--	--	--	--	**5,000**	**160**	27	200	730	--	--	--

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CHEVRON SERVICE STATION NO. 90129
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Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-10 (cont)																
5/15/92		99.18	--	--	--	--	--	--	**5,200**	**190**	37	290	710	--	--	--
7/31/92		99.18	--	15.30	--	83.88	--	--	--	--	--	--	--	--	--	--
8/18/92		99.18	--	15.81	--	83.37	--	--	**5,900**	**180**	25	180	550	--	--	--
9/25/92		99.18	--	15.97	--	83.21	--	--	--	--	--	--	--	--	--	--
2/23/93		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/12/93		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/18/93		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/10/93		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/3/94		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/26/94		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/20/94		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/18/94		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/1/95		99.18	--	15.98	--	83.20	--	--	--	--	--	--	--	--	--	--
7/12/95		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/4/96		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/7/97		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/12/98		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/19/03		99.18	14.81	14.91	0.10	84.35	--	--	--	--	--	--	--	--	--	--
6/26/03		99.18	15.21	15.42	0.21	83.93	--	--	--	--	--	--	--	--	--	--
8/18/03		99.18	16.04	16.23	0.19	83.10	--	--	--	--	--	--	--	--	--	--
9/6/03		99.18	16.02	16.19	0.17	83.13	--	--	--	--	--	--	--	--	--	--
10/14/03		99.18	16.10	16.39	0.29	83.02	--	--	--	--	--	--	--	--	--	--
11/17/03		99.18	15.88	15.95	0.07	83.29	--	--	--	--	--	--	--	--	--	--
12/8/03		99.18	16.22	16.46	0.24	82.91	--	--	--	--	--	--	--	--	--	--
1/7/04		99.18	15.37	15.61	0.24	83.76	--	--	--	--	--	--	--	--	--	--
2/26/04		99.18	14.93	15.05	0.12	84.23	--	--	--	--	--	--	--	--	--	--
3/18/04		99.18	14.82	15.04	0.22	84.32	--	--	--	--	--	--	--	--	--	--
4/21/04		99.18	14.35	14.45	0.10	84.81	--	--	--	--	--	--	--	--	--	--
5/17/04		99.18	14.30	14.41	0.11	84.86	--	--	--	--	--	--	--	--	--	--
6/2/04		99.18	14.87	14.96	0.09	84.29	--	--	--	--	--	--	--	--	--	--
7/1/04		99.18	15.02	15.10	0.08	84.14	--	--	--	--	--	--	--	--	--	--

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CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-10 (cont)																
8/16/04		99.18	14.93	15.02	0.09	84.23	--	--	--	--	--	--	--	--	--	--
9/24/04		99.18	16.22	16.31	0.09	82.94	--	--	--	--	--	--	--	--	--	--
10/15/04		99.18	15.55	15.71	0.26	83.68	--	--	--	--	--	--	--	--	--	--
10/26/04		99.18	16.32	16.40	0.08	82.84	--	--	--	--	--	--	--	--	--	--
12/2/04		99.18	16.32	16.40	0.08	82.84	--	--	--	--	--	--	--	--	--	--
1/5/05		99.18	14.95	14.99	0.04	84.22	--	--	--	--	--	--	--	--	--	--
2/1/05		99.18	14.57	14.64	0.07	84.60	--	--	--	--	--	--	--	--	--	--
8/4/05		99.18	14.42	14.46	0.04	84.75	--	--	--	--	--	--	--	--	--	--
4/5/06		99.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
07/26/06		99.18	--	13.42	--	85.76	--	--	--	--	--	--	--	--	--	--
7/19/07		99.18	--	12.82	--	86.36	--	--	--	--	--	--	--	--	--	--
7/23/08		99.18	--	14.54	--	84.64	--	--	--	--	--	--	--	--	--	--
7/13/09		99.18	--	12.01	--	87.17	--	--	--	--	--	--	--	--	--	--
12/17-18/09		99.18	--	11.29	--	87.89	310	<69	**2,300**	**230**	28	2.9	9.3	<2.5	--	--
3/17/10		99.18	--	11.36	--	87.82	**2,200**	200	**88,000**	**4,900**	**16,000**	**1,200**	**7,600**	<500	--	--
06/22-23/10		99.18	--	11.79	--	87.39	**1,500**	<70	**56,000**	**17**	**2,000**	**1,300**	**11,000**	<63	--	--
9/13/10		99.18	--	15.71	--	83.47	**30,000**	<1,700	**37,000**	**490**	**1,400**	**990**	**5,000**	<13	--	--
12/20/10		99.18	--	15.92	--	83.26	**9,900**	<1,400	**23,000**	**330**	650	620	**2,900**	<25	--	--
6/16/11		99.18	--	15.79	--	83.39	**3,800**	<690	**11,000**	**230**	30	370	630	<20	--	--
9/23/11		99.18	--	16.70	--	82.48	**14,000**	<1,300	**7,700**	**250**	25	380	460	<50	--	--
1/14/12		99.18	16.90	17.20	0.30	82.22	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
3/31/12		99.18	--	16.35	--	82.83	**9,800**	<79	**11,000**	**190**	18	330	450	**29**	--	--
6/2/12		99.18	16.00	16.20	0.20	83.14	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
9/30/12		99.18	16.95	17.02	0.07	82.22	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
12/15/12		99.18	16.50	16.58	0.08	82.66	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
3/16/13		99.18	16.27	16.42	0.15	82.88	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
7/20/13		99.18	16.70	17.18	0.48	82.38	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
9/28/13		99.18	17.18	18.08	0.90	81.82	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
12/7/13		99.18	17.30	18.84	1.54	81.57	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
3/15/14		99.18	16.87	19.06	2.19	81.87	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
6/22/14		99.18	16.12	17.66	1.54	82.75	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--

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Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-11																
2/19/90		98.43	--	--	--	--	--	--	**244,000**	**342**	**5,430**	**2,150**	**9,020**	--	--	--
4/12/91		98.43	--	--	--	--	--	--	ND	ND	**3,300**	**1,700**	**9,500**	--	--	--
6/28/91		98.43	--	--	--	--	--	--	**45,000**	**220**	**5,400**	**2,200**	**11,000**	--	--	--
9/18/91		98.43	--	--	--	--	--	--	**58,000**	**210**	**4,900**	**2,000**	**9,900**	--	--	--
12/3/91		98.43	--	--	--	--	--	--	**41,000**	**210**	**5,100**	**2,000**	**9,700**	--	--	--
2/25/92		98.43	--	--	--	--	--	--	**47,000**	**190**	**4,500**	**1,700**	**8,400**	--	--	--
5/15/92		98.43	--	--	--	--	--	--	**34,000**	**61**	420	**750**	**4,700**	--	--	--
7/31/92		98.43	--	15.18	--	83.25	--	--	--	--	--	--	--	--	--	--
8/18/92		98.43	--	15.31	--	83.12	--	--	**70,000**	**210**	**6,700**	210	**1,100**	--	--	--
9/25/92		98.43	--	15.00	--	83.43	--	--	--	--	--	--	--	--	--	--
2/23/93		98.43	--	15.15	--	83.28	--	--	**52,000**	**150**	**4,100**	**1,700**	**7,900**	--	--	--
5/12/93		98.43	--	14.76	--	83.67	--	--	**57,000**	**200**	**5,200**	**2,000**	**9,400**	--	--	--
8/18/93		98.43	--	14.79	--	83.64	--	--	**52,000**	**130**	**4,100**	**1,800**	**8,300**	--	--	--
11/10/93		98.43	--	15.19	--	83.24	--	--	**51,000**	**160**	**3,500**	**1,800**	**6,300**	--	--	--
2/3/94		98.43	--	14.81	--	83.62	--	--	**33,000**	**74**	**1,900**	**880**	**3,300**	--	--	--
4/26/94		98.43	--	14.11	--	84.32	--	--	**26,000**	**39**	270	170	**2,600**	--	--	--
7/20/94		98.43	--	14.51	--	83.92	--	--	**18,000**	ND	45	85	540	--	--	--
10/18/94		98.43	--	15.32	--	83.11	--	--	**38,000**	**130**	**3,300**	**830**	**4,200**	--	--	--
2/1/95		98.43	--	15.73	--	82.70	--	--	**100,000**	**170**	**3,600**	**2,000**	**11,000**	--	--	--
7/12/95		98.43	--	13.98	--	84.45	--	--	**16,000**	**22**	260	200	**1,200**	--	--	--
1/4/96		98.43	--	14.75	--	83.68	--	--	**52,000**	**170**	**4,700**	**1,500**	**7,800**	--	--	--
1/7/97		98.43	14.00	14.00	Sheen	84.43	--	--	**37,200**	**74.9**	**2,390**	**1,100**	**5,760**	--	--	--
2/12/98		98.43	--	14.85	--	83.58	--	--	**13,100**	**52.4**	184	374	**2,150**	--	--	--
5/31/99	NP	98.43	--	14.92	--	83.51	--	--	**17,000**	**41.3**	137	40.8	**2,540**	--	--	--
6/8/00		98.43	15.56	15.56	Sheen	82.87	--	--	**51,700**	**215**	**4,980**	**1,850**	**8,960**	ND	--	--
1/30/01		98.43	16.75	16.30	0.45	81.59	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
4/11/01		98.43	16.88	15.87	1.01	81.35	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
7/28/01		98.43	16.19	16.03	0.16	82.21	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
10/15/01		98.43	16.39	15.68	0.71	81.90	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
1/5/02		98.43	15.60	15.49	0.11	82.81	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
4/2/02	NP	98.43	--	15.32	--	83.11	--	--	**71,000**	**130**	**5,100**	**2,000**	**11,000**	<20	--	--

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Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-11 (cont)																
6/26/02		98.43	15.69	15.78	0.09	82.72	--	--	--	--	--	--	--	--	--	--
7/11/02		98.43	15.84	15.90	0.06	82.58	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
8/29/02		98.43	16.21	16.29	0.08	82.20	--	--	--	--	--	--	--	--	--	--
9/7/02		98.43	15.91	15.96	0.05	82.51	--	--	--	--	--	--	--	--	--	--
10/10/02		98.43	16.20	16.94	0.74	82.08	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
11/22/02		98.43	15.88	15.94	0.06	82.54	--	--	--	--	--	--	--	--	--	--
12/11/02		98.43	15.77	15.89	0.12	82.64	--	--	--	--	--	--	--	--	--	--
1/10/03		98.43	15.98	17.61	1.63	82.12	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
2/13/03		98.43	15.89	16.93	1.04	82.33	--	--	--	--	--	--	--	--	--	--
3/5/03		98.43	15.78	16.77	0.99	82.45	--	--	--	--	--	--	--	--	--	--
4/21/03		98.43	14.86	14.91	0.05	83.56	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
5/19/03		98.43	14.73	14.76	0.03	83.69	--	--	--	--	--	--	--	--	--	--
6/5/03		98.43	14.94	15.01	0.07	83.48	--	--	--	--	--	--	--	--	--	--
6/26/03		98.43	15.18	15.20	0.02	83.25	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
8/18/03		98.43	16.01	16.05	0.04	82.41	--	--	--	--	--	--	--	--	--	--
9/6/03		98.43	16.01	16.04	0.03	82.41	--	--	--	--	--	--	--	--	--	--
10/14/03	NP	98.43	--	15.90	0.00	82.53	--	--	**65,000**	**72**	**3,600**	**1,700**	**8,600**	<100	--	--
11/17/03		98.43	15.82	15.98	0.16	82.58	--	--	--	--	--	--	--	--	--	--
12/8/03		98.43	15.95	15.97	0.02	82.48	--	--	--	--	--	--	--	--	--	--
1/7/04		98.43	15.46	15.49	0.03	82.96	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
2/26/04		98.43	14.93	14.96	0.03	83.49	--	--	--	--	--	--	--	--	--	--
3/18/04		98.43	15.13	15.16	0.03	83.29	--	--	--	--	--	--	--	--	--	--
4/21/04		98.43	14.64	14.66	0.02	83.79	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
5/17/04		98.43	14.60	14.62	0.02	83.83	--	--	--	--	--	--	--	--	--	--
6/2/04		98.43	15.20	15.22	0.02	83.23	--	--	--	--	--	--	--	--	--	--
7/1/04	NP	98.43	--	15.01	0.00	83.42	--	--	**59,000**	**44**	**2,200**	**980**	**9,000**	<25	--	--
8/16/04		98.43	15.31	15.33	0.02	83.12	--	--	--	--	--	--	--	--	--	--
9/24/04		98.43	16.03	16.05	0.02	82.40	--	--	--	--	--	--	--	--	--	--
10/15/04	NP	98.43	--	15.35	0.00	83.08	--	--	**53,000**	**72**	**2,900**	**1,400**	**8,400**	<200	--	--
10/26/04		98.43	16.00	16.02	0.02	82.43	--	--	--	--	--	--	--	--	--	--
12/2/04		98.43	15.86	15.89	0.03	82.56	--	--	--	--	--	--	--	--	--	--

TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS[1]
CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-11 (cont)																
1/5/05		98.43	15.11	15.14	0.03	83.31	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
2/1/05		98.43	15.05	15.08	0.03	83.37	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
8/4/05		98.43	15.45	15.48	0.03	82.97	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
4/5/06		98.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/26/06	NP	98.43	--	13.42	--	85.01	--	--	<48	1.0	<0.5	0.6	2.0	<2.5	--	--
7/19/07	NP	98.43	--	12.31	--	86.12	--	--	<50	1.5	<0.5	<0.5	<1.5	<10	--	--
7/23/08	NP	98.43	--	14.45	--	83.98	--	--	530	<0.5	<2.0	1.5	8.0	<2.5	--	--
7/13/09	NP	98.43	--	11.64	--	86.79	--	--	**4,500**	**530**	95	170	640	<5.0	--	--
12/17-18/09		98.43	--	11.40	--	87.03	230	<70	**3,800**	**510**	610	23	95	<13	--	--
3/17/10		98.43	--	11.31	--	87.12	400	430	**57,000**	**2,900**	**9,700**	**840**	**6,200**	<63	--	--
06/22-23/10		98.43	--	11.64	--	86.79	**870**	<68	**41,000**	**64**	**1,600**	**940**	**6,700**	<25	--	--
9/13/10		98.43	--	15.16	--	83.27	**25,000**	<1,700	**42,000**	**99**	**1,200**	**760**	**5,300**	<25	--	--
12/21/10		98.43	--	15.33	--	83.10	**1,600**	<350	**40,000**	**390**	**2,700**	**720**	**4,900**	**59**	--	--
6/16/11		98.43	--	15.08	--	83.35	**3,800**	<680	**33,000**	**490**	**1,800**	600	**3,000**	<25	--	--
9/23/11		98.43	--	16.00	--	82.43	**600**	<68	**21,000**	**630**	**1,200**	610	**2,200**	**74**	--	--
1/14/12		98.43	16.25	16.50	0.25	82.13	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
3/31/12		98.43	--	15.60	0.00	82.83	**1,800**	<69	**26,000**	**340**	690	320	**1,300**	**93**	--	--
6/2/12		98.43	15.35	15.55	0.20	83.04	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
9/30/12		98.43	--	16.18	--	82.25	**2,900**	120	**18,000**	**260**	290	490	**1,400**	87/<5[6]	--	--
12/15/12		98.43	16.02	16.18	0.16	82.38	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
3/16/13		98.43	15.64	15.66	0.02	82.79	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
7/20/13		98.43	16.13	16.15	0.02	82.30	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
9/28/13		98.43	16.65	17.10	0.45	81.69	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
12/7/13		98.43	16.60	18.56	1.96	81.44	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
3/15/14		98.43	16.22	18.94	2.72	81.67	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
6/22/14		98.43	15.72	16.00	0.28	82.65	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
MW-12																
2/25/92		100.50	--	--	--	--	--	--	**130,000**	**16,000**	**31,000**	**2,800**	**20,000**	--	--	--
5/15/92		100.50	--	--	--	--	--	--	**109,000**	**12,000**	**28,000**	**2,100**	**16,000**	--	--	--
7/31/92		100.50	--	15.54	--	84.96	--	--	--	--	--	--	--	--	--	--
8/18/92		100.50	--	15.80	--	84.70	--	--	**210,000**	**24,000**	**40,000**	**2,800**	**17,000**	--	--	--
9/25/92		100.50	--	15.64	--	84.86	--	--	--	--	--	--	--	--	--	--

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CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-12 (cont)																
2/23/93		100.50	--	15.99	--	84.51	--	--	**140,000**	**20,000**	**31,000**	**1,600**	**12,000**	--	--	--
5/12/93		100.50	--	15.55	--	84.95	--	--	**120,000**	**19,000**	**29,000**	**1,700**	**15,000**	--	--	--
8/18/93		100.50	--	15.57	--	84.93	--	--	**160,000**	**21,000**	**39,000**	**2,500**	**18,000**	--	--	--
11/10/93		100.50	--	16.12	--	84.38	--	--	**160,000**	**21,000**	**35,000**	**3,000**	**14,000**	--	--	--
2/3/94		100.50	--	15.76	--	84.74	--	--	**130,000**	**21,000**	**43,000**	**2,100**	**13,000**	--	--	--
4/26/94		100.50	--	15.29	--	85.21	--	--	**200,000**	**20,000**	**37,000**	**3,100**	**16,000**	--	--	--
7/20/94		100.50	--	16.39	--	84.11	--	--	**240,000**	**26,000**	**41,000**	**4,000**	**24,000**	--	--	--
10/18/94		100.50	19.65	21.89	2.24	80.40	--	--	--	--	--	--	--	--	--	--
2/1/95		100.50	19.00	20.75	1.75	81.15	--	--	--	--	--	--	--	--	--	--
7/12/95		100.50	--	16.48	--	84.02	--	--	**100,000**	**12,000**	**21,000**	**1,500**	**12,000**	--	--	--
1/4/96		100.50	--	15.01	--	85.49	--	--	**1,100,000**	ND	ND	**1,800**	**37,000**	--	--	--
1/7/97		100.50	16.70	16.70	Sheen	83.80	--	--	**471,000**	**9,700**	**21,500**	**3,210**	**34,600**	--	--	--
2/12/98		100.50	--	16.30	--	84.20	--	--	**176,000**	**17,200**	**27,700**	**2,270**	**21,400**	--	--	--
5/31/99	NP	100.50	--	16.33	--	84.17	--	--	**131,000**	**4,680**	**14,500**	**1,510**	**22,400**	--	--	--
6/8/00		100.50	17.19	17.19	Sheen	83.31	--	--	**153,000**	**12,500**	**24,300**	**2,680**	**25,800**	ND	--	--
1/30/01		100.50	18.34	18.31	0.03	82.21	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
4/11/01		100.50	--	17.11	--	83.39	--	--	**219,000**	**15,200**	**23,700**	**2,420**	**27,900**	--	--	--
7/28/01		100.50	--	16.78	--	83.72	--	--	**170,000**	**12,400**	**23,100**	**2,370**	**27,100**	--	--	--
10/15/01		100.50	--	16.96	--	83.54	--	--	**168,000**	**12,300**	**21,200**	**2,010**	**25,300**	--	--	--
1/5/02		100.50	--	15.54	--	84.96	--	--	**131,000**	**9,870**	**17,500**	**1,810**	**24,300**	--	--	--
NOT MONITORED/SAMPLED			--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/17-18/09		100.50	--	16.69	--	83.81	**9,300**	**1,700**	**200,000**	**4,100**	**4,700**	620	**18,000**	<50	--	--
3/17/10		100.50	--	15.98	--	84.52	**25,000**	<3,500	**200,000**	**4,300**	**7,200**	**980**	**19,000**	<50	--	--
06/22-23/10		100.50	--	15.29	--	85.21	**48,000**	**6,500**	**140,000**	**3,000**	**5,300**	610	**18,000**	<130	--	--
9/13/10		100.50	--	17.29	--	83.21	**7,500**	<730	**130,000**	**10,000**	**17,000**	**1,800**	**17,000**	<500	--	--
12/20/10		100.50	--	17.27	--	83.23	**3,900**	<360	**120,000**	**8,800**	**12,000**	**1,600**	**12,000**	**230**	--	--
6/16/11		100.50	--	17.11	--	83.39	**2,800**	<350	**110,000**	**7,400**	**13,000**	**1,500**	**15,000**	<500	--	--
9/23/11		100.50	--	18.17	--	82.33	**1,300**	460	**130,000**	**14,000**	**21,000**	**2,400**	**17,000**	**270**	--	--
1/14/12		100.50	18.40	18.62	0.22	82.06	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
3/31/12		100.50	--	17.75	--	82.75	**3,800**	**640**	**110,000**	**11,000**	**12,000**	**2,300**	**15,000**	**400**	--	--
6/2/12		100.50	--	20.90	--	79.60	INSUFFICIENT WATER TO SAMPLE				--	--	--	--	--	--

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Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-12 (cont)																
9/30/12		100.50	--	18.45	--	82.05	**2,200**	**660**	**130,000**	**14,000**	**20,000**	**2,700**	**18,000**	240/<10[6]	--	--
12/15/12		100.50	--	17.81	--	82.69	**2,100**	210	**96,000**	**11,000**	**17,000**	**2,700**	**16,000**	310/<5[6]	--	--
3/16/13		100.50	--	17.49	--	83.01	**1,900**	230	**130,000**	**9,200**	**18,000**	**2,600**	**18,000**	250/<5[6]	--	--
7/20/13		100.50	--	18.07	--	82.43	**930**	210	**170,000**	**14,000**	**25,000**	**3,200**	**23,000**	300/<10[6]	--	**28.5**
9/28/13		100.50	18.67	18.86	0.19	81.79	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
12/7/13		100.50	19.33	19.40	0.07	81.16	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
3/15/14		100.50	18.27	18.58	0.31	82.17	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
6/22/14		100.50	17.68	17.70	0.02	82.82	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
MW-13																
2/19/90		99.01	--	--	--	--	--	--	ND	ND	45	78	176	--	--	--
4/12/91		99.01	--	--	--	--	--	--	3,100	5.9	13	79	140	--	--	--
6/28/91		99.01	--	--	--	--	--	--	2,300	30	6.9	100	120	--	--	--
9/18/91		99.01	--	--	--	--	--	--	3,700	14	6.9	50	94	--	--	--
12/3/91		99.01	--	--	--	--	--	--	2,500	26	5.6	110	85	--	--	--
2/25/92		99.01	--	--	--	--	--	--	2,400	27	ND	91	89	--	--	--
5/15/92		99.01	--	--	--	--	--	--	650	6.3	0.83	24	15	--	--	--
7/31/92		99.01	--	15.38	--	83.63	--	--	--	--	--	--	--	--	--	--
8/18/92		99.01	--	15.35	--	83.66	--	--	2,900	1.9	2.1	35	15	--	--	--
9/25/92		99.01	--	15.68	--	83.33	--	--	--	--	--	--	--	--	--	--
2/23/93		99.01	--	15.38	--	83.63	--	--	2,100	4.6	3.6	31	35	--	--	--
5/13/93		99.01	--	15.01	--	84.00	--	--	**2,400**	**21**	ND	160	140	--	--	--
8/18/93		99.01	--	14.92	--	84.09	--	--	**1,800**	3.5	1.9	25	20	--	--	--
11/10/93		99.01	--	15.45	--	83.56	--	--	**1,700**	**7.8**	2.0	14	21	--	--	--
2/3/94		99.01	--	15.27	--	83.74	--	--	**2,300**	4.7	4.2	47	53	--	--	--
4/26/94		99.01	--	14.75	--	84.26	--	--	**3,100**	**15**	5.2	73	45	--	--	--
7/20/94		99.01	--	15.23	--	83.78	--	--	**3,200**	**5.3**	6.4	140	88	--	--	--
10/18/94		99.01	--	16.17	--	82.84	--	--	**4,600**	**8.3**	8.9	160	64	--	--	--
2/1/95		99.01	--	15.86	--	83.15	--	--	**4,900**	**26**	17	120	120	--	--	--
7/12/95		99.01	--	15.45	--	83.56	--	--	**2,800**	**20**	3.6	98	23	--	--	--
1/4/96		99.01	--	15.01	--	84.00	--	--	**4,700**	**36**	7.9	170	82	--	--	--
1/7/97		99.01	--	14.25	--	84.76	--	--	474	ND	ND	ND	2.86	--	--	--
2/12/98		99.01	--	15.09	--	83.92	--	--	ND	ND	ND	ND	ND	--	--	--

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Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-13 (cont)																
5/31/99	NP	99.01	--	15.27	--	83.74	--	--	ND	0.518	ND	ND	ND	--	--	--
6/8/00		99.01	--	15.89	--	83.12	--	--	--	--	--	--	--	--	--	--
1/30/01		99.01	--	16.41	--	82.60	--	--	**4,060**	**12.2**	5.29	88.2	53.9	--	--	--
4/11/01		99.01	--	16.44	--	82.57	--	--	**4,630**	**7.09**	3.32	116	87.0	--	--	--
7/28/01		99.01	--	16.49	--	82.52	--	--	**4,580**	**8.08**	5.39	99.6	72.2	--	--	--
10/15/01		99.01	--	16.77	--	82.24	--	--	**4,120**	4.74	2.88	38.0	37.3	--	--	--
1/5/02		99.01	--	15.66	--	83.35	--	--	**4,620**	3.40	3.68	61.2	34.3	--	--	--
4/2/02	NP	99.01	--	15.33	--	83.68	--	--	**4,000**	<0.50	<1.0	26	7.2	<5.0	--	--
7/11/02	NP	99.01	--	15.91	--	83.10	--	--	**10,000**	1.5	6.0	31	110	<2.5	--	--
10/10/02	NP	99.01	--	16.48	--	82.53	--	--	**4,600**	2.8	9.9	15	110	<20	--	--
1/10/03	NP	99.01	--	16.23	--	82.78	--	--	**2,500**	<5.0	0.73	0.75	2.2	<20	--	--
4/21/03	NP	99.01	--	14.81	--	84.20	--	--	**2,200**	<5.0	1	1.6	<3.0	<10	--	--
6/26/03		99.01	15.18	15.20	0.02	83.83	--	--	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--
10/14/03	NP	99.01	--	16.12	--	82.89	--	--	**2,300**	2.1	<1.0	9.3	4.1	<10	--	--
1/7/04	NP	99.01	--	15.22	--	83.79	--	--	**2,300**	<2.0	0.5	3.1	2.1	<5.0	--	--
4/21/04	NP	99.01	--	14.88	--	84.13	--	--	**2,100**	2.5	1.8	48	25	<50	--	--
7/1/04	NP	99.01	--	15.20	--	83.81	--	--	**2,600**	<5.0	1.4	28	14	<5.0	--	--
10/15/04	NP	99.01	--	15.60	--	83.41	--	--	**1,700**	1.8	<1.0	7.9	<9.0	<10	--	--
1/5/05	NP	99.01	--	15.27	--	83.74	--	--	**1,600**	<5.0	0.6	7.0	<3.0	<5.0	--	--
8/4/05	NP	99.01	--	14.72	--	84.29	--	--	**1,200**	1.6	<0.5	1.7	<3.0	<2.5	--	--
07/26/06	NP	99.01	--	13.90	--	85.11	--	--	54	1.8	<0.5	<0.5	<1.5	<2.5	--	--
7/19/07	NP	99.01	--	13.30	--	85.71	--	--	93	1.9	<0.5	<0.5	<1.5	<10	--	--
7/23/08	NP	99.01	--	14.71	--	84.30	--	--	100	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
7/13/09	NP	99.01	--	12.67	--	86.34	--	--	<50	**16**	<0.5	<0.5	<1.5	<2.5	--	--
12/17-18/09		99.01	--	12.22	--	86.79	<29	<67	93	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/17/10		99.01	--	12.13	--	86.88	**2,200**	**630**	**4,100**	**58**	<10	5.7	15	4.3	--	--
06/22-23/10		99.01	--	12.27	--	86.74	**700**	<70	**23,000**	**70**	91	470	**4,000**	<25	--	--
9/13/10		99.01	--	15.57	--	83.44	**2,000**	<340	**4,400**	**450**	300	82	100	<13	--	--
12/21/10		99.01	--	15.77	--	83.24	**910**	270	**3,900**	**290**	55	69	68	**34**	--	--
6/16/11		99.01	--	15.43	--	83.58	**2,000**	<350	**4,900**	**210**	12	74	89	<50	--	--
9/23/11		99.01	--	16.25	--	82.76	**730**	<69	**4,500**	**190**	8.8	80	85	<50	--	--

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Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-13 (cont)																
1/14/12		99.01	--	16.55	--	82.46	**1,700**	140	**4,300**	**160**	8.2	78	60	**38**	--	--
3/31/12		99.01	--	15.90	--	83.11	**4,300**	89	**4,500**	**200**	8.5	100	80	**36**	--	--
6/2/12		99.01	--	15.60	--	83.41	**3,300**	240	**4,200**	**140**	7.8	110	83	**33**	--	--
9/30/12		99.01	--	16.54	--	82.47	**500**	96	**3,400**	**110**	8.3	96	84	19/<0.5[6]	--	--
12/15/12		99.01	--	16.20	--	82.81	**17,000**	380	**14,000**	**100**	8.5	99	100	17/<3[6]	--	--
3/16/13		99.01	--	16.06	--	82.95	**2,100**	<76	**9,000**	**83**	8.0	100	97	18/<3[6]	--	--
7/20/13		99.01	16.41	16.43	0.02	82.60	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
9/28/13		99.01	17.04	17.54	0.50	81.87	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
12/7/13		99.01	17.32	17.88	0.56	81.58	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
3/15/14		99.01	16.95	17.28	0.33	81.99	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
6/22/14		99.01	16.09	16.44	0.35	82.85	NOT SAMPLED DUE TO THE PRESENCE OF SPH					--	--	--	--	--
MW-14																
2/19/90		99.53	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
4/12/91		99.53	--	--	--	--	--	--	ND	7.2	13	75	130	--	--	--
6/28/91		99.53	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
9/18/91		99.53	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
12/3/91		99.53	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
2/25/92		99.53	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
5/15/92		99.53	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
7/31/92		99.53	--	18.08	--	81.45	--	--	--	--	--	--	--	--	--	--
8/18/92		99.53	--	18.19	--	81.34	--	--	ND	ND	ND	ND	ND	--	--	--
9/25/92		99.53	--	18.10	--	81.43	--	--	--	--	--	--	--	--	--	--
2/23/93		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/12/93		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/18/93		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/10/93		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/3/94		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/26/94		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/20/94		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/18/94		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/1/95		99.53	--	18.72	--	80.81	--	--	--	--	--	--	--	--	--	--
7/12/95		99.53	--	18.54	--	80.99	--	--	ND	ND	ND	ND	ND	--	--	--

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CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-14 (cont)																
1/4/96		99.53	--	18.28	--	81.25	--	--	ND	ND	ND	ND	ND	--	--	--
1/7/97		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/12/98		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/31/99		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/8/00		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/30/01		99.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/11/01		99.53	--	18.75	--	80.78	--	--	<50.0	<0.500	<0.500	0.520	2.22	--	--	--
7/28/01		99.53	--	19.23	--	80.30	--	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--
10/15/01		99.53	--	19.45	--	80.08	--	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--
1/5/02		99.53	--	17.21	--	82.32	--	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--
4/2/02		99.53	--	16.63	--	82.90	--	--	--	--	--	--	--	--	--	--
7/11/02		99.53	--	18.52	--	81.01	--	--	--	--	--	--	--	--	--	--
10/10/02		99.53	--	18.96	--	80.57	--	--	--	--	--	--	--	--	--	--
1/10/03		99.53	--	18.55	--	80.98	--	--	--	--	--	--	--	--	--	--
4/21/03		99.53	--	17.13	--	82.40	--	--	--	--	--	--	--	--	--	--
6/26/03		99.53	--	17.52	--	82.01	--	--	--	--	--	--	--	--	--	--
10/14/03		99.53	--	18.42	--	81.11	--	--	--	--	--	--	--	--	--	--
1/7/04		99.53	--	17.51	--	82.02	--	--	--	--	--	--	--	--	--	--
4/21/04		99.53	--	17.11	--	82.42	--	--	--	--	--	--	--	--	--	--
7/1/04		99.53	--	17.50	--	82.03	--	--	--	--	--	--	--	--	--	--
10/15/04		99.53	--	17.53	--	82.00	--	--	--	--	--	--	--	--	--	--
1/5/05		99.53	--	17.41	--	82.12	--	--	--	--	--	--	--	--	--	--
8/4/05		99.53	--	17.12	--	82.41	--	--	--	--	--	--	--	--	--	--
07/26/06		99.53	--	17.00	--	82.53	--	--	--	--	--	--	--	--	--	--
7/19/07		99.53	--	16.98	--	82.55	--	--	--	--	--	--	--	--	--	--
7/23/08		99.53	--	16.56	--	82.97	--	--	--	--	--	--	--	--	--	--
7/13/09		99.53	--	15.57	--	83.96	--	--	--	--	--	--	--	--	--	--
12/17-18/09		99.53	--	15.56	--	83.97	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/17/10		99.53	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
06/22-23/10		99.53	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
9/13/10		99.53	--	17.79	--	81.74	<29	130	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--

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CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-14 (cont)																
12/21/10		99.53	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
6/16/11		99.53	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--
9/23/11		99.53	--	18.55	--	80.98	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
1/14/12		99.53	--	18.90	--	80.63	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/31/12		99.53	INACCESSIBLE - CAR PARKED OVER WELL				--	--	--	--	--	--	--	--	--	--
6/2/12		99.53	--	18.20	--	81.33	79	<72	**3,700**	**500**	18	280	31	**48**	--	--
9/30/12		99.53	--	18.76	--	80.77	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/15/12		99.53	--	15.94	--	83.59	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/16/13		99.53	--	18.23	--	81.30	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
7/21/13		99.53	--	15.23	--	84.30	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/28/13		99.53	--	15.80	--	83.73	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/7/13		99.53	--	15.91	--	83.62	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/15/14		99.53	--	16.11	--	83.42	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
6/22/14		99.53	--	12.32	--	87.21	<15	<34	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
MW-15																
03/08/01		98.83	--	16.80	--	82.03	--	--	--	--	--	--	--	--	--	--
4/11/01		98.83	--	17.09	--	81.74	--	--	<50.0	0.714	<0.500	<0.500	<1.00	--	<0.00100	--
7/28/01		98.83	--	16.99	--	81.84	--	--	<50.0	0.655	<0.500	<0.500	<1.00	--	0.00221	--
10/15/01		98.83	--	17.10	--	81.73	--	--	<50.0	0.589	<0.500	<0.500	<1.00	--	<0.00100[4]	--
1/5/02		98.83	--	16.26	--	82.57	--	--	62.3	1.24	<0.500	<0.500	<1.00	--	<0.00100	--
4/2/02		98.83	--	15.70	--	83.13	--	--	--	--	--	--	--	--	--	--
7/11/02		98.83	--	16.06	--	82.77	--	--	--	--	--	--	--	--	--	--
10/10/02		98.83	--	16.46	--	82.37	--	--	--	--	--	--	--	--	--	--
1/10/03		98.83	--	16.14	--	82.69	--	--	--	--	--	--	--	--	--	--
4/21/03		98.83	--	15.63	--	83.20	--	--	--	--	--	--	--	--	--	--
6/26/03		98.83	--	16.07	--	82.76	--	--	--	--	--	--	--	--	--	--
10/14/03		98.83	--	16.11	--	82.72	--	--	--	--	--	--	--	--	--	--
1/7/04		98.83	--	15.23	--	83.60	--	--	--	--	--	--	--	--	--	--
4/21/04		98.83	--	15.60	--	83.23	--	--	--	--	--	--	--	--	--	--
7/1/04		98.83	--	16.04	--	82.79	--	--	--	--	--	--	--	--	--	--
10/15/04		98.83	--	16.09	--	82.74	--	--	--	--	--	--	--	--	--	--
1/5/05		98.83	--	15.92	--	82.91	--	--	--	--	--	--	--	--	--	--

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Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-15 (cont)																
8/4/05		98.83	--	15.59	--	83.24	--	--	--	--	--	--	--	--	--	--
07/26/06		98.83	--	15.46	--	83.37	--	--	--	--	--	--	--	--	--	--
7/19/07		98.83	--	16.30	--	82.53	--	--	--	--	--	--	--	--	--	--
7/23/08		98.83	--	16.38	--	82.45	--	--	--	--	--	--	--	--	--	--
7/13/09		98.83	--	15.35	--	83.48	--	--	--	--	--	--	--	--	--	--
12/17-18/09		98.83	--	15.58	--	83.25	400	320	<50	0.8	<0.5	<0.5	<1.5	5.6	--	--
3/17/10		98.83	--	15.25	--	83.58	48	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
06/22-23/10		98.83	--	14.69	--	84.14	42	<68	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/13/10		98.83	--	16.54	--	82.29	<29	91	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/21/10		98.83	--	16.58	--	82.25	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
6/16/11		98.83	--	16.66	--	82.17	47	110	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/23/11		98.83	--	17.37	--	81.46	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
1/14/12		98.83	--	17.60	--	81.23	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/31/12		98.83	--	17.05	--	81.78	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
6/2/12		98.83	--	16.80	--	82.03	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/30/12		98.83	--	17.58	--	81.25	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/15/12		98.83	--	16.95	--	81.88	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/16/13		98.83	--	16.85	--	81.98	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
7/21/13		98.83	--	17.16	--	81.67	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/28/13		98.83	--	13.83	--	85.00	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/7/13		98.83	--	17.68	--	81.15	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/15/14		98.83	--	17.41	--	81.42	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
6/22/14		98.83	--	17.03	--	81.80	<15	<34	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
MW-16																
03/08/01		97.80	--	16.40	--	81.40	--	--	--	--	--	--	--	--	--	--
4/11/01		97.80	INACCESSIBLE - CAR PARKED OVER WELL					--	--	--	--	--	--	--	--	--
6/14/01		97.80	--	16.71	--	81.09	--	--	**2,950**	**52.7**	14.4	217	123	34.1/<5.00[6]	<0.00100	--
7/28/01		97.80	--	16.81	--	80.99	--	--	**1,620**	**46.5**	13.5	122	112	--/<5.0[6]	0.00332	--
10/15/01		97.80	--	17.00	--	80.80	--	--	**3,380**	**111**	28.5	257	211	--/<0.500[6]	<0.00100[4]	--
1/5/02		97.80	--	16.46	--	81.34	--	--	**3,300**	**109**	18.2	247	214	--/<5.00[6]	<0.00100	--
4/2/02	NP	97.80	--	16.32	--	81.48	--	--	**3,900**	**97**	17	230	190	<2.5	--	--
7/11/02	NP	97.80	--	16.50	--	81.30	--	--	**2,900**	**54**	12	160	120	<6.0	--	--

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Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-16 (cont.)																
10/10/02	NP	97.80	--	16.89	--	80.91	--	--	**2,500**	**55**	7.6	140	88	<20	--	--
1/10/03	NP	97.80	--	16.84	--	80.96	--	--	**3,000**	**61**	8.2	140	92	<50	--	--
4/21/03	NP	97.80	--	15.82	--	81.98	--	--	**2,500**	**57**	6.6	110	97	<5.0	--	--
6/26/03	NP	97.80	--	16.11	--	81.69	--	--	**3,900**	**86**	10	180	160	<10	--	--
10/14/03	NP	97.80	--	16.49	--	81.31	--	--	**3,800**	**60**	9.0	150	130	<10	--	--
1/7/04		97.80	INACCESSIBLE - WELL FROZEN SHUT				--	--	--	--	--	--	--	--	--	--
4/21/04	NP	97.80	--	15.81	--	81.99	--	--	**2,200**	**54**	9.9	110	120	<10	--	--
7/1/04	NP	97.80	--	16.09	--	81.71	--	--	**3,900**	**92**	16	190	180	<10	--	--
10/15/04	NP	97.80	--	16.11	--	81.69	--	--	**2,000**	**61**	7.1	120	100	<20	--	--
1/5/05	NP	97.80	--	15.98	--	81.82	--	--	**2,300**	**65**	8.4	120	110	<10	--	--
8/4/05	NP	97.80	--	15.81	--	81.99	--	--	**3,900**	**89**	17	220	200	<5.0	--	--
07/26/06	NP	97.80	--	14.95	--	82.85	--	--	**9,100**	**19**	13	290	560	<50	--	--
7/19/07	NP	97.80	--	14.28	--	83.52	--	--	140	2.0	0.5	1.5	3.8	<10	--	--
7/23/08	NP	97.80	--	15.11	--	82.69	--	--	230	1.5	0.6	15	2.1	<2.5	--	--
7/13/09	NP	97.80	--	13.50	--	84.30	--	--	490	1.9	0.8	2.3	10	<5.0	--	--
12/17-18/09		97.80	--	13.24	--	84.56	77	<71	**6,600**	**11**	8.5	200	320	<20	--	--
3/17/10		97.80	--	13.26	--	84.54	<140	390	**2,100**	**9.2**	5.2	41	77	13	--	--
06/22-23/10		97.80	--	13.15	--	84.65	91	<69	**3,000**	**53**	12	98	130	<20	--	--
9/13/10		97.80	--	15.50	--	82.30	380	170	**6,500**	**150**	48	260	120	<20	--	--
12/21/10		97.80	--	15.54	--	82.26	200	<71	**6,000**	**300**	68	350	95	**66**	--	--
6/16/11		97.80	--	15.34	--	82.46	230	180	**4,800**	**370**	57	350	70	<50	--	--
9/23/11		97.80	--	16.00	--	81.80	62	<71	**4,400**	**580**	80	390	120	**31**	--	--
1/14/12		97.80	--	16.25	--	81.55	32	<68	**4,000**	**500**	27	360	46	**53**	--	--
3/31/12		97.80	--	15.80	--	82.00	54	<70	**3,300**	**490**	21	310	33	**45**	--	--
6/2/12		97.80	--	16.45	--	81.35	56	<68	**3,600**	**530**	18	270	28	**46**	--	--
9/30/12		97.80	--	16.18	--	81.62	50	<70	**2,800**	**370**	14	310	42	39/<0.5[6]	--	--
12/15/12		97.80	--	15.98	--	81.82	60	<69	**2,900**	**330**	12	280	34	<39	--	--
3/16/13		97.80	--	15.77	--	82.03	57	<71	**3,200**	**290**	11	250	28	37/<3[6]	--	--
7/21/13		97.80	--	16.13	--	81.67	95	<67	**3,000**	**290**	10	250	25	32/<1[6]	--	0.27
9/28/13		97.80	--	16.60	--	81.20	31	<67	**2,500**	**230**	7.6	230	20	<29/<0.5[6]	--	0.50
12/7/13		97.80	--	16.83	--	80.97	--	--	**2,100**	**230**	6.4	210	16	<29	--	--

TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS[1]
CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
MW-16 (cont.)																
3/15/14		97.80	--	16.66	--	81.14	33	<67	**1,200**	**200**	4.8	150	11	<2.5	--	<0.085
6/22/14		97.80	--	16.80	--	81.00	22	<33	**1,300**	**150**	4.5	110	8.5	<15/<0.5[6]	--	0.14
RW-1																
7/21/13		--	--	19.11	--	--	<29	<68	**1,100**	**49**	220	23	110	2.8/<0.5[6]	--	--
9/28/13		--	INACCESSIBLE - WELL DAMAGED				--	--	--	--	--	--	--	--	--	--
12/7/13		--	INACCESSIBLE - WELL DAMAGED				--	--	--	--	--	--	--	--	--	--
3/15/14		--	INACCESSIBLE - WELL DAMAGED				--	--	--	--	--	--	--	--	--	--
6/22/14		--	INACCESSIBLE - WELL DAMAGED				--	--	--	--	--	--	--	--	--	--
TRIP BLANK																
2/12/98		--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
5/31/99		--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
6/8/00		--	--	--	--	--	--	--	ND	ND	ND	ND	ND	ND	--	--
1/30/01		--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	--
4/11/01		--	--	--	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--
7/28/01		--	--	--	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--
10/15/01		--	--	--	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--
1/5/02		--	--	--	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--
4/2/02		--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
QA																
7/11/02		--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
10/10/02		--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
01/10/03[5]		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/21/03		--	--	--	--	--	--	--	<50	<0.5	0.9	<0.5	<1.5	<2.5	--	--
6/26/03		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
10/14/03		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
1/7/04		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
4/21/04		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
7/1/04		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
10/15/04		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
1/5/05		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
8/4/05		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
07/26/06		--	--	--	--	--	--	--	<48	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
7/19/07		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--

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CHEVRON SERVICE STATION NO. 90129
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Well ID/ Date	Purge Method	TOC[2] (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE[3] (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	D. Lead (mg/L)	T. Lead
QA (cont)																
7/23/08		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
7/13/09		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/17-18/09		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/17/10		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
06/22-23/10		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/13/10		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/21/10		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
6/16/11		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/23/11		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
1/14/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/31/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
6/2/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/30/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/15/12		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/16/13		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
7/20/13		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
9/28/13		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
12/7/13		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
3/15/14		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
6/22/14		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5	--	--
Standard Method Detection Limit:							--	--	50	0.5	0.5	0.5	1.5	2.5	0.00100	--
MTCA Method A Cleanup Levels:							500	500	800/1,000	5	1,000	700	1,000	20	--	15
Current Method:[7]							NWTPH-Dx Extended[8]		NWTPH-Gx	USEPA 8021B					USEPA 6000/7000	USEPA 6020

TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS[1]
CHEVRON SERVICE STATION NO. 90129
4700 Brooklyn Avenue
Seattle, Washington
Concentrations reported in µg/L unless otherwise noted

Abbreviations:

(D) = Duplicate
D. Lead = Dissolved Lead
DTW/P = Depth to Water or Product
(ft.) = Feet
GWE = Groundwater Elevation
mg/L = milligrams per liter
MTBE = Methyl tertiary butyl ether
MTCA = Model Toxics Control Act
ND = Not Detected
NP = No Purge
QA = Quality Assurance/Trip Blank
SPH = Separate-phase hydrocarbons
SPHT = SPH Thickness
TOC = Top of Casing
T. Lead = Total Lead
TPH = Total Petroleum Hydrocarbons
TPH-DRO = TPH as diesel-range organics
TPH-GRO = TPH as gasoline-range organics
TPH-HRO = TPH as heavy oil-range organics
USEPA = United States Environmental Protection Agency
µg/L = Micrograms per liter
-- = Not Measured/Not Analyzed

Notes:

1 Analytical results in bold font indicate concentrations exceed MTCA Method A cleanup levels.
2 TOC elevations have been surveyed as feet relative to an arbitrary site datum.
3 When SPH is present, GWE has been corrected using the following formula: GWE = [(TOC - DTW) + (SPHT x 0.80)].
4 Laboratory report indicates this sample was laboratory filtered.
5 Laboratory indicates they did not receive a QA sample. No results were provided.
6 MTBE detection confirmed by USEPA Method 8260.
7 Laboratory analytical methods for historical data may not be consistent with current analytical methods. When necessary, consult original laboratory reports to verify methods used.
8 Analyzed with silica-gel clean up.

APPENDIX C

Sampling and Analysis Plan/ Quality Assurance Project Plan (Revised August 22, 2017)

Contents

List of Tables

C1 Introduction

Aspect Consulting, LLC (Aspect) prepared this Sampling and Analysis Plan/Quality Assurance Project Plan (SAP/QAPP) for the 4700 Brooklyn Ave NE Site (Site) as Appendix C to the Interim Action Work Plan (Work Plan). The purpose of this SAP/QAPP is to ensure that field sample collection, handling, and laboratory analysis will generate data to meet project-specific data quality objectives (DQOs) in accordance with the Model Toxics Control Act (MTCA) requirements (WAC 173-340-350). This SAP/QAPP is comprised of two major components: a Field Sampling Plan (FSP) for defining field protocols and a Quality Assurance Project Plan (QAPP) for defining analytical protocols.

Environmental investigation activities to be performed under this SAP/QAPP are on behalf of two parties, FH Brooklyn LLC (FH Brooklyn) and Chevron Environmental Management (Chevron) according to the Agreed Order 13815. The parties have an agreement of responsibility for the different environmental investigations to be performed and therefore each investigation will have a lead party. FH Brooklyn is the lead party for on-property activities and Aspect will perform activities on behalf of FH Brooklyn. Chevron is the lead party for off-property activities and Leidos will perform activities on behalf of Chevron. Given this joint party agreement, this SAP/QAPP contains counterpart elements that apply to the on-property work performed by Aspect, and the off-property work performed by Leidos. It is the responsibility of the Aspect and Leidos personnel and subcontracted analytical laboratory personnel performing the sampling and analysis activities to adhere to the requirements of this SAP/QAPP.

The Field Sampling Plan (Section C2) and Quality Assurance Project Plan (Section C3) are presented below.

C2 Field Sampling Plan

C2.1 Soil Sampling

Performance monitoring associated with the Interim Action will include laboratory analysis of both excavation sidewall and excavation bottom samples. The distance between samples will not exceed 20 feet, and closer sample spacing may be necessary. The samples will be submitted for laboratory analysis of parameters described in this QAPP.

For performance monitoring of the assumed excavation bottom at 24 ft bgs, Aspect will establish a three by four sampling grid that divides the excavation bottom into twelve equal-area rectangles with dimensions of approximately 34 feet by 40 feet. Within each rectangular area, Aspect will field-screen the soil for evidence of contamination, and samples will be collected for laboratory analysis of GRO and BTEX at up to four locations where contamination is potentially indicated. If there are no indications of contamination within the entire rectangular area, a single soil sample will be collected for analysis from the approximate center of the rectangle.

The following subsections detail the procedures for soil sample collection, handling, identification, and sample quality assurance/quality control (QA/QC).

C2.1.1 Soil Sample Collection and Handling Procedures

A geologist from Aspect and/or Leidos will oversee the drilling activities and prepare a geologic log for each of the explorations completed, including an examination of the full length of each soil core recovered by the sonic drilling rig. The field representative will visually classify the soils in accordance with American Society of Testing and Materials (ASTM) Method D2488 and record soil descriptions, field screening results, and other relevant details (e.g., staining, debris, odors, etc.) on the boring log form. If samples are collected for chemical analysis, the sample ID and depth will also be recorded on the log.

Soil samples collected during the Interim Action will be grab samples.

Headspace Vapor

Samples will be field screened to obtain a relative estimate of its volatile organic carbon (VOC) concentration. This field screening will be performed by measuring the concentration of VOCs in the headspace above the sample in a closed container using a field flame-ionization detector (FID) or photoionization detector (PID). The field screening will be performed by placing the soil into a sealed plastic bag (e.g., Ziploc), disaggregating the soil by hand, allowing the sample to equilibrate for at least five minutes, and then opening the bag slightly, inserting the instrument probe, and measuring the VOC concentration in the headspace. If the ambient temperature is below 65ºF, the sample will be warmed (e.g., in a heated vehicle) before the headspace measurement is made.

The PID will be calibrated daily in the field using the manufacturer's calibration standard (100 ppm isobutylene gas). A calibration test, referred to as a "bump test," will be performed as necessary in the field using the calibration gas to check that the PID remains properly calibrated throughout the day.

Sheen Testing

Sheen testing will be conducted by placing soil in a pan of water and observing the water surface for signs of sheen. Sheens are classified as follows:

- **Slight Sheen:** Light, colorless, dull sheen. The spread is irregular and dissipates rapidly.
- **Moderate Sheen:** Light to heavy sheen, may show color/iridescence. The spread is irregular to flowing. Few remaining areas of no sheen are evident on the water surface.
- **Heavy Sheen:** Heavy sheen with color/iridescence. The spread is rapid and the entire water surface may be covered with sheen.

Sample Collection for Laboratory Analysis

All soil samples to be submitted for gasoline-range total petroleum hydrocarbons (TPH-Gx) and VOC analyses will be collected in accordance with U.S. Environmental Protection Agency (EPA) Method 5035A. The soil aliquot for these analyses will be

collected using a laboratory-supplied modified disposable plastic syringe as required by the EPA Method 5035A, and placed in preweighed laboratory-supplied vials.

For all other analyses, the soil samples will be removed from the sampler using a stainless-steel spoon and placed in a stainless-steel bowl for homogenization with the stainless-steel spoon. Gravel-sized material greater than approximately 0.5 inch will be removed from the sample during mixing. A representative aliquot of the homogenized soil will be placed into certified-clean jars supplied by the analytical laboratory.

The initial laboratory submittal will have samples selected for TPH-Gx, TPH-Dx, and BTEX. Samples will be selected based on field screening and to provide proper horizontal and vertical characterization. Select soil samples will be submitted for analysis of chlorinated volatile compounds (CVOCs).

QC soil samples (e.g., field duplicates and trip blanks) will be collected at the respective frequencies prescribed in Section B3.5 of the QAPP.

C2.1.2 Soil Sample Identification

Each soil sample collected for chemical analysis will be assigned a unique sample identification number including the location ID and the depth from which the sample was collected. For example, the soil sample collected from sidewall location 5 at a depth of 10 feet below ground surface (bgs) would be identified as SW-5-10.

C2.2 Ground Water Sampling

Any ground water samples will be collected and handled in accordance with the procedures described below:

- The locking well cap will be removed and the depth-to-ground water will be measured from the surveyed location to the nearest 0.01 foot using an electronic water level measuring device. The depth to the bottom of the monitoring well will also be measured to evaluate siltation of the monitoring well. The water level indicator will be decontaminated between wells.
- The presence of light non-aqueous phase liquid (LNAPL) will be evaluated in all wells screened in the 15-foot zone within the area of LNAPL indicators depicted in Figure 6 of the RIWP. LNAPL presence and thickness will be evaluated using an electronic oil/water interface probe. The oil/water interface probe will be decontaminated between wells.
- Each monitoring well will be purged at a low-flow rate less than 0.5 liter per minute (Puls and Barcelona, 1996; Ecology, 2012) using a peristaltic pump and dedicated tubing (polyethylene tubing with a short length of silicon tubing through the pump head). The tubing intake will be placed just below the center of the saturated section of well screen. During purging, field parameters (temperature, pH, specific electrical conductance, dissolved oxygen, and oxidation-reduction potential [ORP]) will be monitored using a YSI meter and flow-through cell, or equivalent. These field parameters will be recorded at 2- to 4-minute intervals throughout well purging until they stabilize. Stabilization is defined as three successive readings where the parameter values vary by less than

10 percent (or 0.5 milligrams per liter [mg/L] dissolved oxygen if the readings are below 1 mg/L). However, no more than three well casing volumes will be purged prior to ground water sample collection. Three turbidity measurements will also be made before collecting the sample (Hach 2100Q turbidimeter).

- Samples with a field-measured specific electrical conductance greater than 1,000 microSiemans per centimeter (µS/cm) or turbidity greater than 25 nephelometric turbidity units (NTU) will be denoted as such on the chain-of-custody (COC) form, so that the laboratory can employ appropriate sample preparation techniques to avoid analytical interferences for specific analyses.
- If the monitoring well is completely dewatered during purging, samples will be collected when sufficient recharge has occurred to allow filling of all sample containers.
- Once purging is complete, the ground water samples will be collected using the same low-flow rate directly into laboratory-supplied sample containers. Samples for dissolved metals analyses will be filtered using an in-line 0.45 micrometer (µm) filter; at least 0.5 liter of water will be purged through the filter prior to sample collection.
- In wells that have measurable LNAPL, but that require sample collection for CVOC analysis, an additional sampling procedure will be implemented to advance the 1/4-inch peristaltic tubing past the LNAPL. One end of a length of 3/8-inch tubing will be covered with Teflon plumbers tape and the tubing will be placed into the well to a level below the measured LNAPL layer. The 1/4-inch peristaltic tubing will be inserted into the 3/8-inch tubing and pushed through the Teflon tape at the end of the 3/8-inch tubing. Purging and sample collection will then proceed as described above.
- QC ground water samples (e.g., field duplicates and trip blanks) will be collected at the respective frequencies prescribed in Section B3.5.
- Following sampling, the wells cap and monument cap will be secured. Each well's dedicated tubing will be retained in a labeled Ziploc bag for subsequent sampling events. Any damaged or defective well caps or monuments will be noted and scheduled for replacement, if necessary.

C2.2.1 Ground water Sample Identification

Each ground water sample will be assigned a unique sample identification number that includes the well number and the 8-digit date on which the sample was collected. For example, a ground water sample collected from monitoring well MW-10 on December 10, 2016, would be identified as MW-10-121016.

C2.3 Sample Custody and Field Documentation

C2.3.1 Sample Custody

Upon collection, samples will be placed upright in a cooler. Ice or blue ice will be placed in each cooler to meet sample preservation requirements. Inert cushioning material will be placed in the remaining space of the cooler as needed to limit movement of the sample

containers. If the sample coolers are being shipped, not hand carried, to the laboratory, the COC form will be placed in a waterproof bag taped to the inside lid of the cooler for shipment.

After collection, samples will be maintained in the consultant's custody until formally transferred to the analytical laboratory. For purposes of this work, custody of the samples will be defined as follows:

- In plain view of the field representatives;
- Inside a cooler that is in plain view of the field representative; or
- Inside any locked space such as a cooler, locker, car, or truck to which the field representative has the only immediately available key(s).

A COC record provided by the laboratory will be initiated at the time of sampling for all samples collected. The record will be signed by the field representative and others who subsequently take custody of the sample. Couriers or other professional shipping representatives are not required to sign the COC form; however, shipping receipts will be collected and maintained as a part of custody documentation in project files. A copy of the COC form with appropriate signatures will be kept by consultants's project manager.

Upon sample receipt, the laboratory will fill out a cooler receipt form to document sample delivery conditions. A designated sample custodian will accept custody of the shipped samples and will verify that the COC form matches the samples received. The laboratory will notify the project manager, as soon as possible, of any issues noted with the sample shipment or custody.

C2.3.2 Field Documentation

While conducting field work, the field representative will document pertinent observations and events, specific to each activity, on field forms (e.g., boring log form, as-built well completion form, well development form, ground water sampling form, etc.) and/or in a field notebook, and, when warranted, provide photographic documentation of specific sampling efforts. Field notes will include a description of the field activity, sample descriptions, and associated details such as the date, time, and field conditions.

C2.4 Ground Water Level Monitoring

Depth-to-ground water measurements will be conducted in monitoring wells using an electric well sounder, graduated to 0.01 foot. Where there is potential for light or dense non-aqueous phase liquid (NAPL), an oil-water interface probe will be used to measure water levels and evaluate the presence of separate-phase product—either floating or at the bottom of the well.

C2.5 Surveying

Horizontal coordinates for each soil sampling location will be recorded using a hand-held global positioning system (GPS) instrument with real-time differential correction, or with survey equipment, if available.

C2.6 Decontamination and Investigative-Derived Waste Management

All non-disposable sampling equipment (stainless steel spoons and bowls) will be decontaminated before collection of each sample. The decontamination sequence consists of a scrub with a non-phosphate (Alconox or Liquinox) solution, followed by tap water (potable) rinse, and finished with thorough spraying with deionized or distilled water. A solvent rinse – methanol or hexane – may be used to remove petroleum product from sampling equipment prior to the decontamination procedure described above.

Investigation-derived waste (IDW) water generated during equipment decontamination and sampling will be containerized in labeled drums. The containerized IDW water will be disposed of appropriately at a permitted off-site disposal facility.

Soil cuttings from borings and disposable personal protective equipment (PPE) will be placed in labeled Department of Transportation (DOT)-approved drums pending the analytical results to determine appropriate disposal. Each drum will be labeled with the following information:

- Non-Classified IDW
- Content of the drum (soil, water, PPE) and its source (i.e., the exploration[s] from which the contents came);
- Date IDW was generated; and
- Name and telephone number of the contact person.

The drums of IDW will be temporarily consolidated on-site, profiled (in accordance with applicable waste regulations) based on available analytical data, and disposed of appropriately at a permitted off-site disposal facility. Containers of IDW will be on site less than 90 days from date of generation.

Documentation for off-site disposal of IDW will be maintained in the project file.

C3 Quality Assurance Project Plan

This QAPP identifies QC procedures and criteria required to ensure that data collected are of known quality and acceptable to achieve project objectives. Specific protocols and criteria are also set forth in this QAPP for data quality evaluation, upon the completion of data collection, to determine the level of completeness and usability of the data. It is the responsibility of the project personnel performing or overseeing the sampling and analysis activities to adhere to the requirements of the FSP and this QAPP.

C3.1 Purpose of the QAPP

As stated in the Washington State Department of Ecology's (Ecology) Guidelines for Preparation of Quality Assurance Project Plans for Environmental Studies (Ecology Publication No. 04-03-030, July 2004), specific goals of this QAPP are as follows:

- Focus project manager and project team to factors affecting data quality during the planning stage of the project;
- Facilitate communication among field, laboratory, and management staff as the project progresses;
- Document the planning, implementation, and assessment procedures for QA/QC activities for the investigation;
- Ensure that the DQOs are achieved; and
- 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 environmental assessment. To ensure that the DQOs are achieved, this QAPP details aspects of data collection including analytical methods, QA/QC procedures, and data quality reviews. This QAPP describes both quantitative and qualitative measures of data to ensure that the DQOs are achieved. DQOs dictate data collection rationale, sampling and analysis designs that are presented in the main body of the RIWP, and sample collection procedures that are presented in the FSP (Section B2 of this Appendix).

C3.2 Project Organization and Responsibilities

The project consultant team involved with data generation includes representatives from the lead party, either Aspect or Leidos, depending on party responsible for the investigation component. Key individuals and their roles on this project are as follows:

Project Manager—Aspect; Leidos. The project manager is responsible for the successful completion of all aspects of this project, including day-to-day management, production of reports, liaison with party and regulatory agencies, and coordination with the project team members. The project manager is also responsible for resolution of non-conformance issues, is the lead author on project plans and reports, and will provide regular, up-to-date progress reports and other requested information to project team and Ecology.

Field Manager—Aspect; Leidos. The field manager is responsible for overseeing the field sampling program outlined in this plan, including collecting representative samples and ensuring that they are handled properly prior to transfer of custody to the project laboratory. The field manager will manage procurement of necessary field supplies, assure that monitoring equipment is operational and calibrated in accordance with the specifications provided herein, and act as the Site Health and Safety Officer.

Data Quality Manager—Aspect; Leidos. The data quality manager is responsible for developing data quality objectives, selecting analytical methods, coordinating with the analytical laboratory, overseeing laboratory performance, and approving QA/QC procedures. The data quality manager is also responsible for overseeing QA validation of the analytical data reports received from the project laboratory. Data will be validated in-house by the lead party for the data collection, either Aspect or Leidos. The validator works independently, with no interference from those who collect and use the Site data.

Laboratory Project Manager—Friedman and Bruya, Inc. (FBI); Eurofins Lancaster Laboratories. Aspect will contract FBI laboratory for the analysis described in the Interim Action Work Plan. Chevron will contract Eurofins Lancaster Laboratories for investigation activities for which their responsible. The laboratory project manager is responsible for ensuring that all laboratory analytical work for soil and water media complies with project requirements, and acting as a liaison with the project manager, field manager, and data quality manager to fulfill project needs on the analytical laboratory work. This responsibility also applies to analysis the laboratory project manager subcontracts to another laboratory.

C3.3 Analytical Methods and Reporting Limits

Laboratory analytical methods for soil and ground water analyses to be performed during this environmental characterization are as follow:

Chemical Group and Analyte	Analytical Method
Gasoline Range Organics	NWTPH-Gx
Diesel & Residual Range Organics	NWTPH-Dx
Benzene, Toluene, Ethylbenzene, Xylenes	EPA 8260C or 8021B
Chlorinated Volatile Organic Compounds	EPA 8260C
Petroleum Fractionation (EPH/VPH)	NWEPH and NWVPH
Total/Dissolved Lead, cadmium, chromium, nickel, and zinc	EPA 6000 series
Methyl tert-butyl ether (MTBE) Ethylene dibromide (EDB) and Ethylene Dichloride (EDC), Naphthalene	EPA 8260C
Carcinogenic polycyclic aromatic hydrocarbons (cPAHs)	EPA 8270
Polychlorinated biphenyls (PCBs)	EPA 8082

Table C-1 lists samples containers, preservation, and analytical holding times for each analysis.

C3.3.1 Method Detection Limit and Method Reporting Limit

The method detection limit (MDL) is the minimum concentration of a compound that can be measured and reported with a 99-percent confidence that the analyte concentration is greater than zero. MDLs are established by the laboratory using prepared samples, not samples of environmental media.

The method reporting limit (RL) is defined as the lowest concentration at which a chemical can be accurately and reproducibly quantified, within specified limits of

precision and accuracy, for a given environmental sample. The RL can vary from sample to sample depending on sample size, sample dilution, matrix interferences, moisture content, and other sample-specific conditions. As a minimum requirement for organic analyses, the RL should be equivalent to or greater than the concentration of the lowest calibration standard in the initial calibration curve. The expected MDLs and RLs from FBI laboratory are summarized in Tables C-3 and C-4 for water and soil samples collected by Aspect, respectively The expected MDLs and RLs from Eurofins Lancaster Laboratory are summarized in Tables C-5 and C-6 for water and soil samples collected by Leidos, respectively.

C3.4 Data Quality Objectives

DQOs, including the Measurement Quality Indicators (MQIs)—precision, accuracy, representativeness, comparability, completeness, and sensitivity (namely PARCCS parameters) —and sample-specific RLs are dictated by the data quality objectives, project requirements, and intended uses of the data. For this project, the analytical data must be of sufficient technical quality to determine whether contaminants are present and, if present, whether their concentrations are greater than or less than applicable screening criteria based on protection of human health and the environment.

The quality of data generated will be assessed against the MQIs set forth in this QAPP. Specific QC parameters associated with each of the MQIs are summarized in Table C-2. Specific MQI goals and evaluation criteria (i.e., MDLs, RLs, percent recovery (%R) for accuracy measurements, relative percent difference (RPD) for precision measurements, are defined in Tables C-3 through C-6. Definitions of these parameters and the applicable QC procedures are presented below.

C3.4.1 Precision

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared with their average values. Analytical precision is measured through matrix spike/matrix spike duplicate (MS/MSD) samples and laboratory control samples/laboratory control sample duplicate (LCS/LCSD) when there is sufficient sample volume. A laboratory duplicate sample or just an LCS/LCSD may be used in place of an MS/MSD if there is insufficient volume.

Analytical precision is quantitatively expressed as the relative percent difference (RPD) between the LCS/LCSD, MS/MSD, or laboratory duplicate pairs and is calculated with the following formula:

$$RPD\ (\%) = 100 \times \frac{|S - D|}{(S + D)/2}$$

where:
S = analyte concentration in sample
D = analyte concentration in duplicate sample

Analytical precision measurements will be carried out at a minimum frequency of 1 per 20 samples for each matrix sampled, or one per laboratory analysis group. Laboratory precision will be evaluated against laboratory quantitative RPD performance criteria as defined in Tables C-3 through C-6 for specific analytical methods and sample matrices. If the control criteria are not met, the laboratory will supply a justification of why the limits were exceeded and implement the appropriate corrective actions. The RPD will be evaluated during data review and validation. The data reviewer will note deviations from the specified limits and will comment on the effect of the deviations on reported data.

C3.4.2 Accuracy

Accuracy measures the closeness of the measured value to the true value. The accuracy of chemical test results is assessed by "spiking" samples with known standards (surrogates, blank spikes, or matrix spikes) and establishing the average recovery. Accuracy is quantified as the %R. The closer the %R is to 100%, the more accurate the data.

Surrogate recovery will be calculated as follows:

$$\text{Recovery (\%)} = \frac{MC}{SC} \times 100$$

where:

SC = spiked concentration
MC = measured concentration

MS percent recovery will be calculated as follows:

$$\text{Recovery (\%)} = \frac{MC - USC}{SC} \times 100$$

where:

SC = spiked concentration
MC = measured concentration
USC = unspiked sample concentration

Accuracy measurements on MS samples will be carried out at a minimum frequency of 1 in 20 samples per matrix analyzed. Blank spikes will also be analyzed at a minimum frequency of 1 in 20 samples (not including QC samples) per matrix analyzed. Surrogate recoveries for organic compounds will be determined for each sample analyzed for respective compounds. Laboratory accuracy will be evaluated against the performance criteria defined in Tables C-3 through C-6. If the control criteria are not met, the laboratory will supply a justification of why the limits were exceeded and implement the appropriate corrective actions. Percent recoveries will be evaluated during data review and validation, and the data reviewer will comment on the effect of the deviations on the reported data.

C3.4.3 Representativeness

Representativeness measures how closely the measured results reflect the actual concentration or distribution of the chemical compounds in the matrix sampled. The FSP sampling techniques and sample handling protocols (e.g., homogenizing, storage, preservation, and use of duplicates and blanks) have been developed to ensure representative samples. Only representative data will be deemed usable.. The field sampling procedures are described in the FSP (Section B2) of this SAP.

The representativeness of a data point is determined by assessing the integrity of the sample upon receipt at the laboratory (e.g., consistency of sample ID and collection date/time between container labels versus COC forms, breakage/leakage, cooler temperature, preservation, headspace for VOA containers, etc.); compliance of method required sample preparation and analysis holding times; the conditions of blanks (trip blank, rinsate blank, field blank, method/preparation blank, and calibration blank) associated with the sample; and the overall consistency of the results within a field duplicate pair.

C3.4.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. This goal will be achieved through the use of standard techniques to collect samples, USEPA-approved standard methods to analyze samples, and consistent units to report analytical results. Data comparability also depends on data quality. Data of unknown quality cannot be compared.

C3.4.5 Completeness

Completeness is defined as the percentage of measurements made that are judged to be valid. Results will be considered valid if the precision, accuracy, and representativeness objectives are met and if RLs are sufficient for the intended uses of the data. Completeness is calculated as follows:

$$Completeness\ (\%) = \frac{V}{P} \times 100$$

where:

V = number of valid measurements
P = number of measurements taken

Valid and invalid data (i.e., data qualified with the R flag [rejected]) will be identified during data validation. The target completeness goal for this project is 95 percent.

C3.4.6 Sensitivity

Sensitivity depicts the level of ability an analytical system (i.e., sample preparation and instrumental analysis) of detecting a target component in a given sample matrix with a defined level of confidence. Factors affecting the sensitivity of an analytical system include: analytical system background (e.g., laboratory artifact or method

blank contamination), sample matrix (e.g., mass spectrometry ion ratio change, co-elution of peaks, or baseline elevation), and instrument instability.

C3.5 Quality Control Procedures

Field and laboratory QC procedures are outlined below.

C3.5.1 Field Quality Control

Beyond use of standard sampling protocols defined in the FSP, field QC procedures include maintaining the field instrumentation used. Field instruments (e.g., PID for evaluating presence of VOCs in soil samples, and the YSI meter for measuring field parameters during ground water sampling) are maintained and calibrated regularly prior to use, in accordance with manufacturer recommendations.

In addition, field QC samples will be collected and submitted for analyses to monitor the precision and accuracy associated with field procedures. Field QC samples to be collected and analyzed for this RI include field duplicates, trip blanks, and equipment rinsate blanks. The definition and sampling requirements for field QC samples are presented below.

Blind Field Duplicates

Blind field duplicate samples are used to check for sampling and analysis reproducibility; however, the field duplicate sample results include variability introduced during both field sampling and laboratory preparation and analysis, and EPA data validation guidance provides no specific evaluation criteria for field duplicate samples. Advisory evaluation criteria are set forth at 35 percent for RPD (if both results are greater than five times the RL) and two times the RLs for concentration difference (if either of the result is less than five times the RL) between the original and field duplicate results.

Field Duplicates will be submitted "blind" to the laboratory as discrete samples (i.e., given unique sample identifiers to keep the duplicate identity unknown to the laboratory), but will be clearly identified in the field log. **Field duplicate samples will be collected at a frequency of 5 percent (1 per 20) of the field samples for each matrix and analytical method, but not less than one duplicate per sampling event per matrix.**

If a given soil sample depth interval lacks sufficient volume (recovery) to supply material for a planned analysis and its field duplicate analysis, the field duplicate aliquot will be collected for that analysis from another depth interval in that same location if practical.

Trip Blank

Trip blank samples will be used to monitor possible VOC cross-contamination occurring during sample transport. Trip blank samples are prepared and supplied by the laboratory using organic-free, reagent-grade water into a VOC vial prior to the collection of field samples. The trip blank sample vials are placed with and accompany the VOC and TPH-Gx samples through the entire transporting process. **One trip blank will be collected for each soil sampling round and each ground water sampling round where VOC or TPH-Gx analyses are conducted.**

In case a target compound is present in a trip blank, results for all samples shipped with this trip blank will be evaluated and data qualified accordingly if determined that the results are affected.

Equipment Rinsate Blank

Equipment rinsate blanks are collected to determine the potential of cross-contamination introduced by nondedicated equipment (e.g., bladder pump and YSI meter) that is used at multiple sample locations. Deionized water (obtained from the laboratory) is rinsed through the decontaminated sampling equipment and collected into adequate sample containers for analysis. The equipment rinsate blank is then handled in a manner identical to the primary samples collected with that piece of equipment. The blank is then processed, analyzed, and reported as a regular field sample. **The rinsate blank collection frequency will be 1 per 20 samples for each matrix and analytical method, but not less than one equipment rinsate per sampling event per matrix**. When dedicated equipment is used, equipment rinsate blanks will not be collected.

C3.5.2 Laboratory Quality Control

The laboratories' analytical procedures must meet requirements specified in the respective analytical methods or approved laboratory standard operating procedures (SOPs), e.g., instrument performance check, initial calibration, calibration check, blanks, surrogate spikes, internal standards, and/or labeled compound spikes. Specific laboratory QC analyses required for this project will consist of the following at a minimum:

- Instrument tuning, instrument initial calibration, and calibration verification analyses as required in the analytical methods and the laboratory standard operating procedures (SOPs);
- Laboratory and/or instrument method blank measurements at a minimum frequency of 5percent (1 per 20 samples) or in accordance with method requirements, whichever is more frequent; and
- Accuracy and precision measurements as defined in Table C-2, at a minimum frequency of 5 percent (1 per 20 samples) or in accordance with method requirements, whichever is more frequent. In cases where a pair of MS/MSD or MS/laboratory duplicate analyses are not performed on a project sample, a set of LCS/LCSD analyses will be performed to provide sufficient measures for analytical precision and accuracy evaluation.

The laboratory's QA officers are responsible for ensuring that the laboratory implements the internal QC and QA procedures detailed in the laboratory's Quality Assurance Manual.

C3.6 Corrective Actions

If routine QC audits by the laboratory result in detection of unacceptable conditions or data, actions specified in the laboratory SOPs will be taken. Specific corrective actions are outlined in each SOP used and can include the following:

- Identifying the source of the violation;

- Reanalyzing samples if holding time criteria permit;
- Resampling and analyzing;
- Evaluating and amending sampling and analytical procedures; and/or
- Accepting but qualifying data to indicate the level of uncertainty.

If unacceptable conditions occur, the laboratory will contact the project manager to discuss the issues and determine the appropriate corrective action. Corrective actions taken by the laboratory during analysis of samples for this project will be documented by the laboratory in the case narrative associated with the affected samples.

In addition, the project data quality manager will review the laboratory data generated for this investigation to ensure that project DQOs are met. If the review indicates that non-conformances in the data have resulted from field sampling or documentation procedures or laboratory analytical or documentation procedures, the impact of those non-conformances on the overall project data usability will be assessed. Appropriate actions, including re-sampling and/or re-analysis of samples may be recommended to the project manager to achieve project objectives.

C3.7 Data Reduction, Quality Review, and Reporting

All data will undergo a QA/QC evaluation at the laboratory which will then be reviewed by the responsible data quality manager. Initial data reduction, evaluation, and reporting at the laboratory will be carried out in full compliance with the method requirement and laboratory SOPs. The laboratory internal review will include verification (for correctness and completeness) of electronic data deliverable (EDD) accompanied with each laboratory report. The responsible database manager will verify the completeness and correctness of all laboratory deliverables (i.e., laboratory report and EDDs) before releasing the deliverables for data validation.

C3.7.1 Minimum Data Reporting Requirements

The following sections specify general and specific requirements for analytical data reporting to provide sufficient deliverables for project documentation and data quality assessment.

General Requirements

The following requirements apply to laboratory reports for all types of analyses:

- A laboratory report will include a cover page signed by the laboratory director, the laboratory QA officer, or his/her designee to certify the eligibility of the reported contents and the conformance with applicable analytical methodology.
- Definitions of abbreviations, data flags and data qualifiers used in the report.
- Cross reference of field sample names and laboratory sample identity for all samples in the SDG.
- Completed COC document signed and dated by parties of acquiring and receiving.

- Completed sample receipt document with record of cooler temperature and sample conditions upon receipt at the laboratory. Anomalies such as inadequate sample preservation, inconsistent bottle counts, and sample container breakage, and communication record and corrective actions in response to the anomalies will be documented and incorporated in the sample receipt document. The document will be initialed and dated by personnel that complete the document.
- Case narrative that addresses any anomalies or QC outliers in relation to sample receiving, sample preparation, and sample analysis on samples in the sample delivery group (SDG). The narrative will be presented separately for each analytical method and each sample matrix.
- All pages in the report are to be paginated. Any insertion of pages after the laboratory report is issued will be paginated with starting page number suffixed with letters (e.g., pages inserted between pages 134 and 135 should be paginated as 134A, 134B, etc.)
- Any resubmitted or revised report pages will be submitted to project manager with a cover page stating the reason(s) and scope of resubmission or revision, and signed by laboratory director, QA officer, or the designee.

Specific Requirements

The following presents specific requirements for laboratory reports:

- Sample results: All soil sample results will be reported on a dry-weight basis. The report pages for sample results (namely Form 1s) will, at minimum, include sample results, RLs, unit, proper data flags, preparation, and analysis, dilution factor, and percent moisture (for solid samples).
- Method blank results.
- LCS and LCSD (if matrix spike duplicate analysis is not performed) results with laboratory acceptance criteria for %R and RPD.
- Surrogate spike results with laboratory acceptance criteria for %R.
- MS and MSD results with laboratory acceptance criteria for %R and RPD. In cases where MS/MSD analyses were not performed on a project sample, LCS/LCSD analyses should be performed and reported instead.

C3.8 Data Quality Verification and Validation

Reported analytical results will be qualified by the laboratory to identify QC concerns in accordance with the specifications of the analytical methods. Additional laboratory data qualifiers may be defined and reported by the laboratory to more completely explain QC concerns regarding a particular sample result. All data qualifiers will be defined in the laboratory's narrative reports associated with each case.

Data validation will be performed on all data consistent with United States Environmental Protection Agency Stage 2B requirements. Environmental data validation will be performed using Ecology's TCP Data Validation and Sampling Analysis Plan (SAP)/Quality Assurance Project Plan (QAAP) for data validation for all Formal Cleanup

Sites (Ecology September 23, 2016). Data validation shall be performed at Quality Assurance Level 2 (EPA2) with Third Party Data Validation.

In cases where a systematic QC problem is suspected, such as unusual detections of an analyte or consistent outlying results of a QC parameter, a more detailed review will be performed on laboratory records pertinent to the concerned analysis to further evaluate the extend of the QC issue and the final data quality and usability. The actual level of validation for each data point will be entered in the electrical database submitted to the Ecology Environmental Information Management system (EIMs). Data validation will be conducted following the guidance below:

- EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, January 2010, USEPA 540/R-10/011
- EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, Office of Superfund Remediation and Technical Innovation, U.S. Environmental Protection Agency, June 2008, USEPA-540-R-08-01.

The data validation will examine and verify the following parameters against the method requirements and laboratory control limits specified in Tables C-3 through C-6:

- Sample management and holding times;
- Instrument performance check, calibration, and calibration verification;
- Laboratory and field blank results;
- Detection and reporting limits;
- Laboratory replicate results;
- MS/MSD results;
- LCS and/or standard reference material results;
- Field duplicate results;
- Surrogate spike recovery (organic analyses only);
- Internal standard recovery (internal calibration methods only);
- Inter-element interference check (ICP analyses only);
- Serial dilution (metals only);
- Labeled compound recovery (isotope dilution methods only); and
- Ion ratios for detected compounds (high resolution GC/MS methods only).

Data qualifiers will be assigned based on outcome of the data validation. Data qualifiers are limited to and defined as follows:

- U—The analyte was analyzed for but was determined to be non-detect above the reported sample quantitation limit, or the quantitation limit was raised to the concentration found in the sample due to blank contamination.

- J—The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ—The analyte was not detected above the reported quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R—The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be verified.
- DNR—Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

In cases of multiple analyses (such as an undiluted and a diluted analysis) performed on one sample, the optimal result will be determined and only the determined result will be reported for the sample.

The scope and findings of the data validation will be documented and discussed in the Data Validation Report(s). The Data Validation Report(s) will be appended to the RI report.

C3.9 Preventative Maintenance Procedures and Schedules

Preventative maintenance in the laboratory will be the responsibility of the laboratory personnel and analysts and ensured by the laboratory project manager. This maintenance includes routine care and cleaning of instruments and inspection and monitoring of carrier gases, solvents, and glassware used in analyses. Details of the maintenance procedures are addressed in the respective laboratory SOPs.

Precision and accuracy data are examined for trends and excursions beyond control limits to determine evidence of instrument malfunction. Maintenance will be performed when an instrument begins to change as indicated by the degradation of peak resolution, shift in calibration curves, decrease in sensitivity, or failure to meet one or another of the method-specific QC criteria.

Maintenance and calibration of instruments used in the field for sampling (e.g., PID for evaluating presence of VOCs in soil samples, and the YSI meter for measuring field parameters during ground water sampling) will be conducted regularly in accordance with manufacturer recommendations prior to use.

C3.10 Performance and System Audits

The project manager has responsibility for reviewing the performance of the laboratory QA program; this review will be achieved through regular contact with the analytical laboratory's project manager. To ensure comparable data, all samples of a given matrix to be analyzed by each specified analytical method will be processed consistently by the same analytical laboratory.

C3.11 Data and Records Management

Records will be maintained documenting all activities and data related to field sampling and chemical analyses.

C3.11.1 Field Documentation

Raw data received from the analytical laboratory will be reviewed, entered into a computerized database, and verified for consistency and correctness. The database will be updated based on data review and independent validation if necessary.

The following field data will be included in the database:

- Sample location coordinates
- Sample type (i.e., ground water or soil)
- Soil or ground water sampling depth interval

Information regarding whether concentrations represent total phase (unfiltered samples) or dissolved phase (filtered samples) will be compiled and stored in the database. Data will be submitted to Ecology's Environmental Information Management (EIM) database once data have been reviewed and validated.

C3.11.2 Analytical Data Management

Raw data received from the analytical laboratory will be reviewed, entered into a computerized database, and verified for consistency and correctness. The database will be updated based on data review and independent validation if necessary.

The following field data will be included in the database:

- Sample location coordinates
- Sample type (i.e., ground water or soil)
- Soil or ground water sampling depth interval

Information regarding whether concentrations represent total phase (unfiltered samples) or dissolved phase (filtered samples) will be compiled and stored in the database. Data will be submitted to Ecology's Environmental Information Management (EIM) database once data have been reviewed and validated.

C4 References

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Washington State Department of Ecology (Ecology), 2004, Collecting and Preparing Soil Samples for VOC Analysis, Implementation Memorandum Number 5, June 17, 2004.

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TABLES

Table C-1 - Analytical Methods, Sample Containers, Preservation, and Holding Times

Project No. 160092, 4700 Brooklyn Avenue, Seattle, Washington

Sample Matrix	Analytical Parameter	Analytical Method	Sample Container	No. Containers	Preservation Requirements	Holding Time
Soil	Gasoline Range TPH	NWTPH-Gx	Method 5035A, 40-mL vials	4	4°C ±2°C, Freeze within 48 hours to <-7°C	14 days
	Diesel and Motor Oil Range TPH	NWTPH-Dx/SW846 Method 3630 (Silica Gel Cleanup)	4 ounce jar	1	4°C ±2°C	14 days for extraction; 40 days for analysis
	BTEX	Method 8021 B	Method 5035A, 40-mL vials	4	4°C ±2°C, Freeze within 48 hours to <-7°C	14 days
	EPH/VPH	NWEPH/NWVPH	4 Ounce Jar/Method 5035A, 40-mL vials	5	4°C ±2°C, Freeze within 48 hours to <-7°C	14 days
	MTBE, EDC, EDB, Naphthalene	Method 8260	Method 5035A, 40-mL vials	4	4°C ±2°C, Freeze within 48 hours to <-7°C	14 days
	Polychlorinated Biphenyls (PCBs)	Method 8082	4-ounce jar	1	4°C ±2°C	6 months
	Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs)	Method 8270	4-ounce jar	1	4°C ±2°C	6 months
	Cadmium, Chromium, Lead, Nickel, Zinc	Method 6020	4-ounce jar	1	4°C ±2°C	6 months
Water	Gasoline Range TPH	Method NWTPH-Gx	40-mL VOA vials	3	4°C ±2°C, HCl pH < 2	14 days
	Diesel and Motor Oil Range TPH	NWTPH-Dx/SW846 Method 3630 (Silica Gel Cleanup)	500-mL amber glass bottle	1	4°C ±2°C	7 days for extraction, 40 days for analysis
	VOCs (including MTBE)	Method 8260	40-mL VOA vials	3	4°C ±2°C, 1 with HCl pH < 2, 2 without HCl	14 days for analysis
	EPH/VPH	NWEPH/NWVPH	1000-mL amber/40-mL VOA vials	4	4°C ±2°C, HCl pH < 2	7 days for extraction, 40 days for analysis/14 days for anlaysis
	Lead	Method 6020	500-mL HDPE bottle	1	4°C ±2°C, $HN0_3$ pH < 2 (after field filtration)	28 days

Notes:
HCL = hydrochloric acid
TPH = total petroleum hydrocarbons
VOA = volatile organic analysis
BTEX = benzene, toluene, ethylbenzene, xylenes
MTBE = methyl tert-butyl ether

Table C-2 - QC Parameters Associated with PARCCS

Project No. 160092, 4700 Brooklyn Ave, Seattle, Washington

Data Quality Indicators	QC Parameters
Precision	RPD values of:
	(1) LCS/LCS Duplicate
	(2) MS/MSD
	(3) Field Duplicates
Accuracy/Bias	Percent Recovery (%R) or Percent Difference (%D) values of:
	(1) Initial Calibration and Calibration Verification
	(2) LCS
	(3) MS
	(4) Surrogate Spikes
	Results of:
	(1) Instrument and Calibration Blank
	(2) Method (Preparation) Blank
	(3) Trip Blank
	(4) Equipment Rinsate Blank (if appropriate)
Representativeness	Results of All Blanks
	Sample Integrity (Chain-of-Custody and Sample Receipt Forms)
	Holding Times
Comparability	Sample-specific Reporting Limits
	Sample Collection Methods
	Laboratory Analytical Methods
Completeness	Data Qualifiers
	Laboratory Deliverables
	Requested/Reported Valid Results
Sensitivity	MDLs and MRLs

Notes:

LCS = laboratory control sample

MDL = method detection limit

MRL = method reporting limit

MS/MSD = matrix spike/matrix spike duplicate

QC = Quality Control

PARCCS = Precision, Accuracy, Representativeness, Comparability, Completeness, Sensistivity

Table C-3 - Measurement Quality Objectives for Water Samples

Friedman and Bruya, Inc

Project No. 160092, 4700 Brooklyn Avenue, Seattle, Washington

Analyte Name	MDL[(A)]	MRL	LCS/LCS %R[(A)]	RPD (%)	Surrogate %R[(A)]
Volatile Organic Compounds (VOCs) by SW8260C (µg/L)					
1,1,1,2-Tetrachloroethane	0.040	0.2	80 – 128	≤40	n/a
1,1,1-Trichloroethane	0.041	0.2	79 – 124	≤40	n/a
1,1,2,2-Tetrachloroethane	0.060	0.2	80 – 120	≤40	n/a
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.043	0.2	76 – 124	≤40	n/a
1,1,2-Trichloroethane	0.129	0.2	80 – 120	≤40	n/a
1,1-Dichloroethane	0.053	0.2	80 – 120	≤40	n/a
1,1-Dichloroethene	0.054	0.2	74 – 120	≤40	n/a
1,1-Dichloropropene	0.034	0.2	80 – 120	≤40	n/a
1,2,3-Trichlorobenzene	0.110	0.5	80 -125	≤40	n/a
1,2,3-Trichloropropane	0.131	0.5	80 – 120	≤40	n/a
1,2,4-Trichlorobenzene	0.107	0.5	77 – 127	≤40	n/a
1,2,4-Trimethylbenzene	0.024	0.2	80 – 122	≤40	n/a
1,2-Dibromo 3-Chloropropane	0.366	0.5	79 – 129	≤40	n/a
1,2-Dibromoethane (Ethylene Dibromide)	0.075	0.2	80 – 120	≤40	n/a
1,2-Dichlorobenzene	0.036	0.2	80 – 120	≤40	n/a
1,2-Dichloroethane	0.072	0.2	80 – 121	≤40	n/a
1,2-Dichloropropane	0.035	0.2	80 – 120	≤40	n/a
1,3,5-Trimethyl Benzene	0.015	0.2	80 – 120	≤40	n/a
1,3-Dichlorobenzene	0.036	0.2	80 – 120	≤40	n/a
1,3-Dichloropropane	0.062	0.2	80 – 120	≤40	n/a
1,4-Dichlorobenzene	0.040	0.2	80 – 120	≤40	n/a
2,2-Dichloropropane	0.052	0.2	72 – 133	≤40	n/a
2-Butanone	0.814	5.0	73 – 123	≤40	n/a
2-Chloro Toluene	0.024	0.2	80 – 120	≤40	n/a
2-Chloroethylvinyl Ether	0.250	1.0	62 – 130	≤40	n/a
2-Hexanone	0.902	5.0	80 – 129	≤40	n/a
4-Chloro Toluene	0.016	0.2	80 – 120	≤40	n/a
4-Isopropyl Toluene	0.026	0.2	80 – 124	≤40	n/a
4-Methyl-2-Pentanone	0.974	5.0	80 – 125	≤40	n/a
Acetone	2.057	5.0	64 – 125	≤40	n/a
Acrolein	2.476	5.0	60 – 124	≤40	n/a
Acrylonitrile	0.604	1.0	76 – 123	≤40	n/a
Benzene	0.027	0.2	80 – 120	≤40	n/a
Bromobenzene	0.060	0.2	80 – 120	≤40	n/a
Bromochloromethane	0.061	0.2	80 – 120	≤40	n/a

Table C-3 - Measurement Quality Objectives for Water Samples

Friedman and Bruya, Inc

Project No. 160092, 4700 Brooklyn Avenue, Seattle, Washington

Analyte Name	MDL[(A)]	MRL	LCS/LCS %R[(A)]	RPD (%)	Surrogate %R[(A)]
Volatile Organic Compounds (VOCs) by SW8260C (µg/L)					
Bromodichloromethane	0.051	0.2	80 – 122	≤40	n/a
Bromoethane	0.041	0.2	77 – 122	≤40	n/a
Bromoform	0.062	0.2	62 – 149	≤40	n/a
Bromomethane	0.252	1.0	68 – 130	≤40	n/a
Carbon Disulfide	0.037	0.2	77 – 124	≤40	n/a
Carbon Tetrachloride	0.044	0.2	71 – 139	≤40	n/a
Chlorobenzene	0.023	0.2	80 – 120	≤40	n/a
Chloroethane	0.086	0.2	68 – 133	≤40	n/a
Chloroform	0.027	0.2	80 – 120	≤40	n/a
Chloromethane	0.095	0.5	77 – 122	≤40	n/a
cis 1,3-dichloropropene	0.061	0.2	80 – 127	≤40	n/a
cis-1,2-Dichloroethene	0.043	0.2	78 – 120	≤40	n/a
Dibromochloromethane	0.048	0.2	80 – 120	≤40	n/a
Dibromomethane	0.145	0.2	80 – 120	≤40	n/a
Dichlorodifluoromethane	0.052	0.2	68 – 133	≤40	n/a
Ethyl Benzene	0.037	0.2	80 – 120	≤40	n/a
Hexachloro-1,3-Butadiene	0.073	0.5	80 – 135	≤40	n/a
Iodomethane (Methyl Iodide)	0.227	1.0	76 – 123	≤40	n/a
iso-propyl Benzene	0.021	0.2	80 – 120	≤40	n/a
Methylene Chloride	0.485	1.0	71 – 125	≤40	n/a
Methyl-tert-butyl ether	0.073	0.5	79 – 121	≤40	n/a
Naphthalene	0.118	0.5	80 – 128	≤40	n/a
n-Butyl Benzene	0.025	0.2	80 – 125	≤40	n/a
n-Propyl Benzene	0.023	0.2	80 – 120	≤40	n/a
sec-Butyl Benzene	0.024	0.2	80 – 121	≤40	n/a
Styrene	0.045	0.2	80 – 121	≤40	n/a
tert-Butyl Benzene	0.026	0.2	80 – 121	≤40	n/a
Tetrachloroethene	0.047	0.2	80 – 120	≤40	n/a
Toluene	0.040	0.2	80 – 120	≤40	n/a
trans 1,3-Dichloropropene	0.081	0.2	79 – 132	≤40	n/a
trans-1,2-Dichloroethene	0.048	0.2	75 – 120	≤40	n/a
trans-1,4-Dichloro 2-Butene	0.324	1.0	47 – 147	≤40	n/a
Trichloroethene	0.049	0.2	80 – 120	≤40	n/a
Trichlorofluoromethane	0.037	0.2	74 – 135	≤40	n/a
Vinyl Acetate	0.069	0.2	74 – 120	≤40	n/a
Vinyl Chloride	0.069	0.2	74 – 120	≤40	n/a
m,p-xylene	0.052	0.4	80 – 120	≤40	n/a
o-Xylene	0.035	0.2	80 – 120	≤40	n/a

Table C-3 - Measurement Quality Objectives for Water Samples

Friedman and Bruya, Inc

Project No. 160092, 4700 Brooklyn Avenue, Seattle, Washington

Analyte Name	MDL[(A)]	MRL	LCS/LCS %R[(A)]	RPD (%)	Surrogate %R[(A)]
Volatile Organic Compounds (VOCs) by SW8260C (µg/L)					
1,2-Dichloroethane-d4	n/a	n/a	80 – 130	≤40	80 – 120
1,2-Dichlorobenzene-d4	n/a	n/a	80 – 120	≤40	80 – 120
Toluene-d8	n/a	n/a	80 – 120	≤40	80 – 120
4-Bromofluorobenzene	n/a	n/a	80 – 120	≤40	80 – 120
Gasoline Range Hydrocarbons by NWTPH-Gx (µg/L)					
Gasoline Range Hydrocarbons	0.057	0.25	80 – 120	≤40	n/a
Bromobenzene	n/a	n/a	77 – 120	≤40	n/a
Diesel and Motor Oil Range Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup (µg/L)					
Diesel Range Hydrocarbons	39	100	61-104	≤40	n/a
Oil Range Hydrocarbons	10	200	60 – 130	≤40	n/a
o-Terphenyl	n/a	n/a	50 – 150	≤40	n/a
Metals					
Lead	0.046	0.1	80 – 120	≤20	n/a

Notes:

[(A)] = Based on current laboratory control criteria. Some values may vary slightly between instruments and can be subject to change as the laboratory updates the charted values periodically.

%R = percent recovery

LCS/LCSD = laboratory control samples and laboratory control sample duplicate

MDL = method detection limit

MRL = method reporting limit

n/a = not applicable

RPD = relative percent difference

µg/L = microgram per liter

(--) = No PSL identified

Table C-4 - Measurement Quality Objectives for Soil Samples

Friedman and Bruya, Inc.

Project No. 160092, 4700 Brooklyn Ave, Seattle, Washington

Analyte Name	MDL[(A)]	MRL	LCS/LCS %R[(A)]	RPD (%)	Surrogate %R[(A)]
Volatile Organic Compounds (VOCs) by SW8260C (mg/kg)					
1,1,1,2-Tetrachloroethane	0.000233	0.001	80 – 120	≤40	n/a
1,1,1-Trichloroethane	0.000226	0.001	78 – 133	≤40	n/a
1,1,2,2-Tetrachloroethane	0.000253	0.001	71 – 120	≤40	n/a
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.000287	0.002	72 – 142	≤40	n/a
1,1,2-Trichloroethane	0.000286	0.001	77 – 120	≤40	n/a
1,1-Dichloroethane	0.000203	0.001	65 – 139	≤40	n/a
1,1-Dichloroethene	0.000336	0.001	73 – 138	≤40	n/a
1,1-Dichloropropene	0.000312	0.001	80 – 123	≤40	n/a
1,2,3-Trichlorobenzene	0.000305	0.005	76 – 122	≤40	n/a
1,2,3-Trichloropropane	0.000517	0.002	75 – 120	≤40	n/a
1,2,4-Trichlorobenzene	0.000332	0.005	75 – 130	≤40	n/a
1,2,4-Trimethylbenzene	0.00023	0.001	77 – 125	≤40	n/a
1,2-Dibromo-3-Chloropropane	0.000586	0.005	61 – 128	≤40	n/a
1,2-Dibromoethane (Ethylene Dibromide	0.000176	0.001	79 – 120	≤40	n/a
1,2-Dichlorobenzene	0.000293	0.001	77 – 120	≤40	n/a
1,2-Dichloroethane	0.000191	0.001	77 – 120	≤40	n/a
1,2-Dichloropropane	0.000162	0.001	74 – 120	≤40	n/a
1,3,5-Trimethylbenzene	0.000254	0.001	77 – 126	≤40	n/a
1,3-Dichlorobenzene	0.000227	0.001	76 – 120	≤40	n/a
1,3-Dichloropropane	0.000209	0.001	77 – 120	≤40	n/a
1,4-Dichlorobenzene	0.000232	0.001	75 – 120	≤40	n/a
2,2-Dichloropropane	0.000292	0.001	77 – 137	≤40	n/a
2-Butanone	0.000513	0.005	64 – 120	≤40	n/a
2-Chloroethyl Vinyl Ether	0.000276	0.005	20 – 157	≤40	n/a
2-Chlorotoluene	0.0003	0.001	76 – 120	≤40	n/a
2-Hexanone	0.000439	0.005	62 – 128	≤40	n/a
4-Chlorotoluene	0.000277	0.001	75 – 121	≤40	n/a
4-Isopropyl Toluene	0.000236	0.001	78 – 131	≤40	n/a
4-Methyl-2-Pentanone	0.00042	0.005	70 – 124	≤40	n/a
Acetone	0.000482	0.005	48 – 132	≤40	n/a
Acrolein	0.003809	0.05	60 – 130	≤40	n/a
Acrylonitrile	0.001026	0.005	59 – 124	≤40	n/a
Benzene	0.000296	0.001	80 – 120	≤40	n/a
Bromobenzene	0.000153	0.001	75 – 120	≤40	n/a
Bromochloromethane	0.000323	0.001	69 – 133	≤40	n/a
Bromodichloromethane	0.000254	0.001	80 – 122	≤40	n/a
Bromoethane	0.00044	0.002	74 – 132	≤40	n/a
Bromoform	0.000297	0.001	63 – 120	≤40	n/a
Bromomethane	0.000187	0.001	40 – 172	≤40	n/a
Carbon Disulfide	0.000559	0.001	72 – 146	≤40	n/a

Table C-4 - Measurement Quality Objectives for Soil Samples

Friedman and Bruya, Inc.

Project No. 160092, 4700 Brooklyn Ave, Seattle, Washington

Analyte Name	MDL[(A)]	MRL	LCS/LCS %R[(A)]	RPD (%)	Surrogate %R[(A)]
Carbon Tetrachloride	0.000213	0.001	76 – 136	≤40	n/a
Chlorobenzene	0.000219	0.001	80 – 120	≤40	n/a
Chloroethane	0.000462	0.001	53 – 154	≤40	n/a
Chloroform	0.000234	0.001	75 – 126	≤40	n/a
Chloromethane	0.000263	0.001	65 – 129	≤40	n/a
cis-1,2-Dichloroethene	0.00024	0.001	75 – 124	≤40	n/a
cis-1,3-Dichloropropene	0.000226	0.001	80 – 124	≤40	n/a
Dibromochloromethane	0.000266	0.001	77 – 123	≤40	n/a
Dibromomethane	0.000147	0.001	80 – 120	≤40	n/a
Dichlorodifluoromethane	0.000207	0.001	67 – 142	≤40	n/a
Ethyl Benzene	0.000202	0.001	80 – 120	≤40	n/a
Hexachloro-1,3-Butadiene	0.00041	0.005	72 – 135	≤40	n/a
Iodomethane (Methyl Iodide)	0.000215	0.001	34 – 181	≤40	n/a
Isopropyl Benzene	0.000233	0.001	77 – 127	≤40	n/a
Methylene Chloride	0.000635	0.002	61 – 128	≤40	n/a
Methyl-t-butyl ether (MTBE)	0.000231	0.001	68 – 124	≤40	n/a
Naphthalene	0.000429	0.005	71 – 122	≤40	n/a
n-Butylbenzene	0.000262	0.001	75 – 134	≤40	n/a
n-Propyl Benzene	0.000272	0.001	76 – 126	≤40	n/a
s-Butylbenzene	0.00024	0.001	77 – 127	≤40	n/a
Styrene	0.000138	0.001	80 – 122	≤40	n/a
t-Butylbenzene	0.000306	0.001	77 – 125	≤40	n/a
Tetrachloroethene	0.000257	0.001	76 – 131	≤40	n/a
Toluene	0.000151	0.001	78 – 120	≤40	n/a
Volatile Organic Compounds (VOCs) by SW8260C (mg/kg)					
trans-1,2-Dichloroethene	0.000266	0.001	73 – 131	≤40	n/a
trans-1,3-Dichloropropene	0.000216	0.001	80 – 126	≤40	n/a
trans-1,4-Dichloro-2-Butene	0.000437	0.005	62 – 127	≤40	n/a
Trichloroethene	0.000212	0.001	80 – 120	≤40	n/a
Trichlorofluoromethane	0.000266	0.001	57 – 161	≤40	n/a
Vinyl Acetate	0.000381	0.005	54 – 138	≤40	n/a
Vinyl Chloride	0.000235	0.001	74 – 134	≤40	n/a
m,p-Xylene	0.000392	0.001	80 – 123	≤40	n/a
o-Xylene	0.000224	0.001	80 – 120	≤40	n/a
1,2-Dichloroethane-d4	n/a	n/a	80 – 149	≤40	80 – 122
1,2-Dichlorobenzene-d4	n/a	n/a	80 – 120	≤40	80 – 120
Toluene-d8	n/a	n/a	77 – 120	≤40	80 – 120
4-Bromofluorobenzene	n/a	n/a	80 – 120	≤40	80 – 120

Table C-4 - Measurement Quality Objectives for Soil Samples

Friedman and Bruya, Inc.

Project No. 160092, 4700 Brooklyn Ave, Seattle, Washington

Analyte Name	MDL[(A)]	MRL	LCS/LCS %R[(A)]	RPD (%)	Surrogate %R[(A)]
Gasoline Range Hydrocarbons by NWTPH-Gx (mg/kg)					
Gasoline Range Hydrocarbons	0.057	0.25	80 – 120	≤40	n/a
Bromobenzene	n/a	n/a	49 – 143	≤40	n/a
Diesel and Motor Oil Range Hydrocarbons by NWTPH-Dx with Silica Gel Cleanup (mg/kg)					
Diesel Range Hydrocarbons	1.28	5	60 – 108	≤40	n/a
Oil Range Hydrocarbons	1.57	10	60 – 130	≤40	n/a
o-Terphenyl	n/a	n/a	50 – 150	≤40	n/a
Polychlorinated Biphenyls (PCBs; mg/kg)					
PCB Arochlors	0.0021	0.1	55-130	≤20	n/a
Carcinogenic Polycyclic Aromatic Hydrocarbons					
benzo[a]pyrene	0.000065	0.01	51-118	≤20	24-168
benzo[a]anthracene	0.000088	0.01	51-115	≤20	24-168
benzo[b]fluoranthene	0.000182	0.01	56-123	≤20	24-168
benzo[k]fluoranthene	0.000194	0.01	54-131	≤20	24-168
chrysene	0.000165	0.01	55-129	≤20	24-168
dibenz[a,h]anthracene	0.00025	0.01	50-141	≤20	24-168
indeno[1,2,3-cd]pyrene	0.000183	0.01	49-148	≤20	24-168
Metals					
Lead	n/a	0.1	80-120	≤20	75-125
Cadmium	0.0198	1	70-130	≤20	n/a
Copper	0.189	1	70-130	≤20	n/a
Nickel	0.0335	1	70-130	≤20	n/a
Zinc	0.089	1	70-130	≤20	n/a

Notes:

[(A)] = Based on current laboratory control criteria. Some values may vary slightly between instruments

%R = Percent recovery

LCS/LCSD = Laboratory control samples and laboratory control sample duplicate

MDL = Method detection limit

mg/kg = milligram per kilogram

MRL = Method reporting limit

n/a = not applicable

RPD = Relative percent difference

Table C-5 Measurement Quality Objectives for Water Samples

Eurofins Lancaster Laboratories

Project No. 160092, 4700 Brooklyn Avenue, Seattle, Washington

Analyte	Groundwater					
	Analytical Method	MDL	LOD	LOQ	LCS	RPD
		(ug/L)			(%)	
Petroleum Hydrocarbons (µg/L)						
Gasoline-Range Hydrocarbons	NWTPH-Gx	50	100	250	75-135	≤ 30
Diesel-Range Hydrocarbons	NWTPH-Dx	45	90	100	32-115	≤ 20
Heavy Oil-Range Hydrocarbons	NWTPH-Dx	100	250	250	--	--
Volatile Organic Compounds (VOCs) by SW8260C (µg/L)						
Benzene	USEPA 8260B	0.5	1	1	78-120	≤ 30
Ethylbenzene	USEPA 8260B	0.5	1	1	78-120	≤ 30
Toluene	USEPA 8260B	0.5	1	1	80-120	≤ 30
Total Xylenes	USEPA 8260B	0.5	1	1	80-120	≤ 30
Methyl tert-butyl ether	USEPA 8260B	0.5	1	1	75-120	≤ 30
Vinyl Chloride	USEPA 8260B	0.5	1	1	63-121	≤ 30
Cis-1,2-Dichloroethene	USEPA 8260B	0.5	1	1	80-120	≤ 30
1,2 Dichloroethane (EDC)	USEPA 8260B	0.5	1	1	66-128	≤ 30
1,2-Dibromoethane (EDB)	USEPA 8011	0.0	0.02	0.03	60-140	≤ 20
Metals						
Lead	USEPA 6010	6.2	15	15	80-120	≤ 20

Notes:

LCS = laboratory control sample (supplied by Eurofin Lancaster Labs)

LOD = limit of detection (supplied by Eurofin Lancaster Labs)

LOQ = limit of quantitation (supplied by Eurofin Lancaster Labs; equivalent to PQLs or RLs)

MDL = method detection limit (supplied by Eurofin Lancaster Labs)

RPD = relative percent difference (supplied by Eurofin Lancaster Labs)

µg/L = Micrograms per liter

-- Not applicable or available

Table C-6 - Measurement Quality Objectives for Soil Samples

Eurofins Lancaster Laboratories

Project No. 160092, 4700 Brooklyn Avenue, Seattle, Washington

Analyte	Soil					
	Analytical Method	MDL	LOD	LOQ	LCS	RPD
		(mg/kg)			(%)	
Petroleum Hydrocarbons (mg/kg)						
Gasoline Range Hydrocarbons	NWTPH-Gx	1.000	2.000	5.000	80-120	≤ 30
Diesel-Range Hydrocarbons	NWTPH-Dx	3	6	7	61-115	≤ 20
Heavy Oil-Range Hydrocarbons	NWTPH-Dx	10	20	30	--	--
Volatile Organic Compounds (mg/kg)						
Benzene	USEPA 8260B	0.0005	0.002	0.005	80-120	≤ 30
Ethylbenzene	USEPA 8260B	0.001	0.002	0.005	80-120	≤ 30
Toluene	USEPA 8260B	0.001	0.002	0.005	80-120	≤ 30
Total Xylenes	USEPA 8260B	0.001	0.002	0.005	80-120	≤ 30
Vinyl Chloride	USEPA 8260B	0.001	0.002	0.005	59-120	≤ 30
Cis-1,2-Dichloroethene	USEPA 8260B	0.001	0.002	0.005	8-120	≤ 30
1,2 Dichloroethane (EDC)	USEPA 8260B	0.001	0.002	0.005	70-133	≤ 30
1,2-Dibromoethane (EDB)	USEPA 8260B	0.001	0.002	0.005	80-120	≤ 30
Metals						
Lead	USEPA 6010	0.55	1.5	1.5	80-120	≤ 20

Notes:

LCS = laboratory control sample (supplied by Eurofin Lancaster Labs)

LOD = limit of detection (supplied by Eurofin Lancaster Labs)

LOQ = limit of quantitation (supplied by Eurofin Lancaster Labs; equivalent to PQLs or RLs)

MDL = method detection limit (supplied by Eurofin Lancaster Labs)

RPD = relative percent difference (supplied by Eurofin Lancaster Labs)

mg/kg = milligrams per kilogram

-- Not applicable or not available

APPENDIX D

Health and Safety Plan

PROJECT-SPECIFIC HEALTH AND SAFETY PLAN

Property Name:	4700 Brooklyn Ave NE		
Project Number:	160092		
Prepared By:	Bob Hanford	Date:	8/18/2017
Reviewed By:	Bob Hanford	Date:	8/18/2017

1 INTRODUCTION

This project-specific health and safety plan (HASP) establishes procedures and practices to protect employees of Aspect Consulting, LLC (Aspect) from potential hazards posed by field activities at the subject site. In this HASP, measures are provided to minimize potential exposure, accidents, and physical injuries that may occur during daily activities and adverse conditions. Contingency arrangements are also provided for emergency situations.

2 EMERGENCY CONTACT INFORMATION

PROPERTY LOCATION	4700 Brooklyn Ave NE Seattle, WA 98105
NEAREST HOSPITAL	UW Medical Center – Emergency Room 2180 NE Pacific St Seattle, WA 98195 **Attached figure shows route to hospital.**
EMERGENCY RESPONDERS	Police, Ambulance, Fire ……**911**
OTHER CONTACTS	Bob Hanford (mobile) ……..……...(206) 276-9256 Aspect, Seattle Office ……..……(206) 328-7443 Client Contact ……..(310) 903-3141
IN EVENT OF EMERGENCY, CALL FOR HELP AS SOON AS POSSIBLE	Give the following information: ✓ **Where You Are:** address, cross streets, or landmarks ✓ **Phone Number:** you are calling from ✓ **What Happened:** type of accident, injury ✓ **How Many Persons:** need help ✓ **What is Being Done:** for the victims ✓ **You Hang Up Last:** let whomever you called hang up first

In case of serious injuries or other emergency, immediately call Bob Hanford, Aspect Corporate Safety Officer, at (206) 780-7729 or (206)-276-9256. If no response, call Doug Hillman at (206) 328-7443 or Tim Flynn at (206) 780-9370.

3 PERSONNEL ORGANIZATION AND CHAIN OF COMMAND

The Aspect Project Manager assigns the Site Safety Supervisor and other field personnel for this project, and has ultimate responsibility for developing this project-specific HASP and ensuring it is complied with during project execution. The Aspect Site Safety Supervisor has responsibility and

authority for Aspect employees' safety during site activities. Other Aspect personnel on-site have the responsibility to comply with this project-specific HASP in coordination with the Site Safety Supervisor.

Aspect Personnel			
Role	**Name**	**Office Phone**	**Mobile/Cell Phone**
Project Manager	Adam Griffin	206-780-7746	865-696-7658
Site Safety Supervisor	Bob Hanford	206-780-7729	206-276-9256

Aspect will inform its subcontractors working on-site of potential fire, explosion, health, safety or other hazards associated with planned site activities, and can make available to them this project-specific HASP. **However, all subcontractors are solely responsible for preparation of their own HASP, and for the safety of their employees.**

4 SITE CONTROL PLAN

4.1 Property Description

Property Name:	Chevron	
Property Location or Address:	4700 Brooklyn Ave NE, Seattle 98105	
Owner:	Eran Fields	
Current Property Use: **Past Use of Property (if different):**	Commercial, retail Service station	
Designated Hazardous Waste Site?	(yes or no) NO	If yes, specify federal, state, or other:
Industrial Site?	NO	
Topography:	flat	
Surround Land Use/Nearest Population:	Residential and commercial	
Drinking Water/Sanitary Facilities:	On-site	
Site Map:	In Work Plan	

4.2 Site Access Control

Describe controls to be used to prevent entry by unauthorized persons:

- The work area will be fenced and closed to the public.
- Traffic cones, barriers, and caution tape, as needed.

Describe how exclusion zones and contamination reduction zones will be designated:

- The area immediately adjacent to the excavation will be considered an exclusion zone.
- Aspect field personnel will remain vigilant about preventing unauthorized persons from approaching the exclusion zone.

4.3 Worker Hygiene Practices

Aspect personnel will use the following hygiene practices while working on-site:

- No person will eat, drink, chew gum or tobacco in potentially contaminated areas. Drinking of replacement fluids for heat stress control will be permitted only in areas that are free from contamination, except in emergency situations.
- Smoking is prohibited except in designated areas of the site.
- Long hair will be secured away from the face so that it does not interfere with any activities.
- All personnel leaving potentially contaminated areas will wash their hands and face prior to entering any eating areas.
- Personnel leaving potentially contaminated areas will shower (including washing hair) and change to clean clothing as soon as practical after leaving the property.

4.4 Emergency Communications

Aspect workers on-site will have a mobile (cell) phone on-site that will be used for communications should an emergency arise. Phone numbers for Aspect site personnel are listed in Section 3: Personnel Organization and Chain of Command.

4.5 Nearest Medical Assistance

FIRST CALL 911. The route from the site to the nearest hospital is shown in the attached figure.

5 SITE WORK PLAN

Proposed Work Activities On Site:	Soil excavation, soil stockpiling. Loading truck and trailer combinations. Dewatering, water treatment and discharge to sewer. Soil sampling Excavation backfill and site grading
Objectives of Site Activities:	Remove petroleum contaminated soil, backfill and restore grade site.
Proposed Work Dates:	*2018*
Will On-site Personnel Potentially be Exposed to Hazardous Substances?	If yes, describe: The property has been a service station for nearly 100 years. Three former USTs have a confirmed petroleum release Petroleum hydrocarbons and aromatic volatile organic compounds (BTEX)
Do Personnel Conducting Site Activities have Training in Accordance with 296-843-200 WAC?	Yes

6 DECONTAMINATION

Goals	Procedures
To prevent the distribution of contaminants outside the exclusion zone or cross-contamination of samples, the following procedures will be used to decontaminate sample equipment.	Decontamination process involving Alconox wash, tap water rinse, and deionized water rinse (with air dry).
To prevent the distribution of contaminants outside the exclusion zone, unnecessary vehicles will not be allowed inside the exclusion zone. For vehicles required in the exclusion zone (e.g., excavator), the following decontamination procedures will be used to prevent contamination from leaving the exclusion zone:	Contractor is responsible for cleaning all equipment prior to leaving the contamination reduction zone.
To minimize or prevent worker exposure to hazardous substances, all personnel working in the exclusion zone and contamination reduction zones will comply with the following decontamination procedures:	Wash boots and rain gear that have come into contact with soil or groundwater with Alconox/tap water and air dry. Dispose of disposable personal protective equipment (PPE such as gloves, Tyvek) into Department of Transportation (DOT) approved and appropriately labeled 55-gallon drums. To prevent distribution of contaminants outside the exclusion zone, do not allow unnecessary vehicles inside the exclusion zone.
Excavated Soil	Place soil from each location on visqueen with bermed edges, and cover with visqueen weighted to minimize chance for removal by wind; appropriate disposition of the cuttings will be based on soil quality data collected for each location.

7 HAZARD ANALYSIS

The potential hazards and corresponding control measures for planned site work activities are as follows:

Work Activity	Primary Potential Hazards	Control Measures
Remedial excavation	Getting hit by equipment, especially from overhead.	Stay back from equipment and stay alert. Modified Level D PPE (with hard hat, traffic vest, steel-toe boots).
	Excessive noise.	Wear hearing protection.
	Chemical exposure (skin contact, ingestion, inhalation).	Modified Level D PPE. Air monitoring.
Sampling	Getting hit by excavator.	Wear traffic vest. Stay back from excavator and maintain eye contact with operator.
	Falling into open excavation, engulfment.	Do not enter excavation >4 feet deep unless properly shored or sloped. Stay back from unstable slopes. Sample from excavator bucket where needed.
	Chemical exposure (skin contact, ingestion, inhalation).	Modified Level D PPE. Air monitoring.
All	Getting hit by other trucks working on the property.	Wear traffic vest. Stay back from roads and stay alert.
	Heat stress	Take breaks, seek shade, and increase fluid intake.

Potentially Hazardous Chemicals Known or Suspected at the Property and Permissible Exposure Limits (air)					
Substance	**Medium**	**OHSA PEL**	**OSHA STEL**	**IDLH**	**Carcinogen or Other Hazard**
Gasoline-Range Petroleum	Soil, GW	10 ppmv	15 ppmv	250 ppmv	T
Diesel- and Oil-Range Petroleum	Soil, GW	1 ppmv	5 ppmv	500 ppmv	T
Benzene	Soil, GW	1 ppmv	5 ppmv	500 ppmv	C
Toluene	Soil, GW	200 ppmv	--	500 ppmv	T
Ethylbenzene	Soil, GW	100 ppmv	--	800 ppmv	T
Xylenes	Soil, GW	100 ppmv	150 ppmv	900 ppmv	T
Heavy Metals, lead	Soil, GW	Pb: 0.05 mg/m^3	Pb: --	Pb: 0.05 mg/m^3	

Notes:
-- = none established
C = carcinogen
cPAH = carcinogenic polycyclic aromatic hydrocarbon
GW = groundwater
IDLH = immediately dangerous to life or health
N/A = not applicable/not available
OHSA = Occupational Safety and Health Administration
T = toxic
PCB = polychlorinated biphenyl
PEL = permissible exposure level (8-hour time-weighted average)
STEL = short-term exposure level

Chemicals Known or Suspected On-site (check box)			
Chemical Class	**Known**	**Possible**	**Unlikely**
Corrosive (if expected, specify)			x
Ignitable (if expected, specify)		x	
Reactive			x
Volatile		x	
Radioactive			x
Explosive			x
Biological Agent			x
Particulate or Fibers			x
If known or likely, describe:			

8 PERSONAL PROTECTIVE EQUIPMENT

Based on the hazards identified above, the following personal protective equipment (PPE) will be required for the following field activities. This section specifies both an initial level of protection and a more protective (contingency) level or protection, in the event conditions should change. The contingency defines the PPE that will be available on-site.

Work Activity	Level of Protection	
	Initial	Contingency
Excavating	D	Mod. D or C
Sample handling	D	Mod. D or C
Other activities (list):		

Each level of protection will incorporate the following equipment (specify type of protective clothing, boots, gloves, respiratory cartridges or other protection, safety glasses, hardhat, and hearing protection):

Level of Protection	Specific PPE
Level D	Work clothing, traffic vest, rubber (nitrile) gloves, steel toe and shank boots, safety glasses, hearing protection, and hardhat.
Modified D	Level D plus Tyvek coveralls or rain gear, and neoprene outer gloves.
Level C	Level D plus air-purifying respirator with combination organic vapor/HEPA dust cartridges. Level C protection must be approved by Corporate Health and Safety Officer and proper training certificates in place. Medical monitoring and fit test certificates must be on site for respirator use.

NOTE: Project personnel are not permitted to deviate from the specified levels of protection without the prior approval of the Site Safety Supervisor. A traffic vest is not needed if work clothes are suitably visible (e.g., orange/yellow rain gear or white/yellow chemical protective clothing).

9 AIR MONITORING

Air monitoring will be conducted periodically to identify potentially hazardous environments and determine reference or background concentrations. Air monitoring can be used to define exclusion zones. Air monitoring can also be conducted to evaluate relative concentrations of volatile organic chemicals in samples. Aspect will make air monitoring data available to the contractor but contractor is responsible for their own monitoring and their employees safety.

The following equipment will be used to monitor air quality in the breathing zone during work activities:

Monitoring Instrument	Calibration Frequency	Parameters of Interest	Sampling Frequency
PID	Daily	Volatile organic compounds	During collection of each soil sample during drilling. During excavation if workers smell gasoline odor. During routine monitoring of remediation equipment.
Detector tube (*specify chemical)*	As required	Benzene	As needed based on PID monitoring

Use the following action levels to determine the appropriate level of personal protection to be used during field activities:

Monitoring Instrument	Reading in Breathing Zone	Action	Comments
PID	10 PID units above background for 5 minutes	Confirm with detector tube (*specify chemical*) or upgrade to Level C (air-purifying respirator with organic vapor cartridge).	Alternatively, use engineering controls (ventilation) or leave location and return at a later time.
Detector tube (*specify chemical)*	> PEL	Upgrade to Level C (air-purifying respirator with organic vapor cartridge).	Leave location pending further evaluation by Aspect Corporate Safety Officer.
PID	100 PID units above background for 5 minutes	Leave location pending further evaluation by Aspect Corporate Safety Officer.	

10 SAFETY EQUIPMENT

The following safety equipment will be on-site during the proposed field activities:

Other Required Items (check items required)	
First aid kit	x
Eyewash (e.g., bottled water)	
PID	x
Drinking water	x
Fire extinguisher	x
Brush fan	
Wind sox	
Other:	

11 SPILL CONTAINMENT

Will the proposed field work include the handling of bulk chemicals?	Yes	No x
If yes, describe spill containment provisions for the property:		

12 CONFINED SPACE ENTRY

Will the proposed field work include confined space entry?	Yes	No x
If yes, attach to this plan the confined space entry checklist and permit.		

13 ASPECT TRAINING AND MEDICAL MONITORING

Aspect employees who perform site work are responsible for understanding potential health and safety hazards of the site. All Aspect site workers will have health and safety training for hazardous waste operations, in accordance with 296-843-200 WAC. In addition, Aspect requires medical monitoring for all employees potentially exposed to chemical hazards in concentrations in excess of the permissible exposure limit (PEL) for more than 30 days per year, as required under 296-843-210 WAC. Employees who use respirators for their work will have a respirator medical evaluation as required under Chapter 296-842-WAC.

14 DISCLAIMER

Aspect Consulting, LLC does not guarantee the health or safety of any person entering this property. Because of the potentially hazardous nature of this property and the activity occurring thereon, it is not possible to discover, evaluate, and provide protection for all possible hazards that may be encountered. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury and illness at this property. The health and safety guidelines in this plan were prepared specifically for this site and should not be used on any other property without prior evaluation by trained health and safety personnel.

FIELD SAFETY PLAN CONSENT AGREEMENT

Aspect Consulting Employees

I have reviewed the project-specific health and safety plan, dated *August 18, 2017* for the planned remedial activities at the 4700 Brooklyn Ave. project fieldwork. I understand the purpose of the plan and I consent to adhere to its procedures and guidelines while conducting activities on site that are described in the plan.

Employee Printed Name	Signature	Date

Site Visitors

I have been briefed on the contents of the project-specific health and safety plan. I am responsible for my own health and safety.

Visitor Printed Name and Organization/Company	Signature	Date

FIELD SAFETY MEETING MINUTES

Site Name _____Project No. _____

Meeting Location _____

Meeting Date _____ Time _____ Conducted by_____

Pre-field Work Orientation_____ Weekly Safety Meeting_____ Other_____

Subject Discussed _____

_____

_____

_____

Site Safety Supervisor Comments _____

_____

_____

_____

Participants

Printed Name (and company if subcontractor)	Signature

Route to Hospital

Directions from 4700 Brooklyn to UW Emergency Room

A 4700 Brooklyn

B 2180 NE Pacific St Seattle, WA 98195

Drive 1 mi, 8 minutes

A 4700 Brooklyn Ave NE, Seattle, WA 98105, USA

Head south on **Brooklyn Ave NE** toward **NE 47th St**

135 ft

Turn **left** at the 1st cross street onto **NE 47th St**

551 ft

Turn **right** onto **15th Ave NE**

0.703 mi

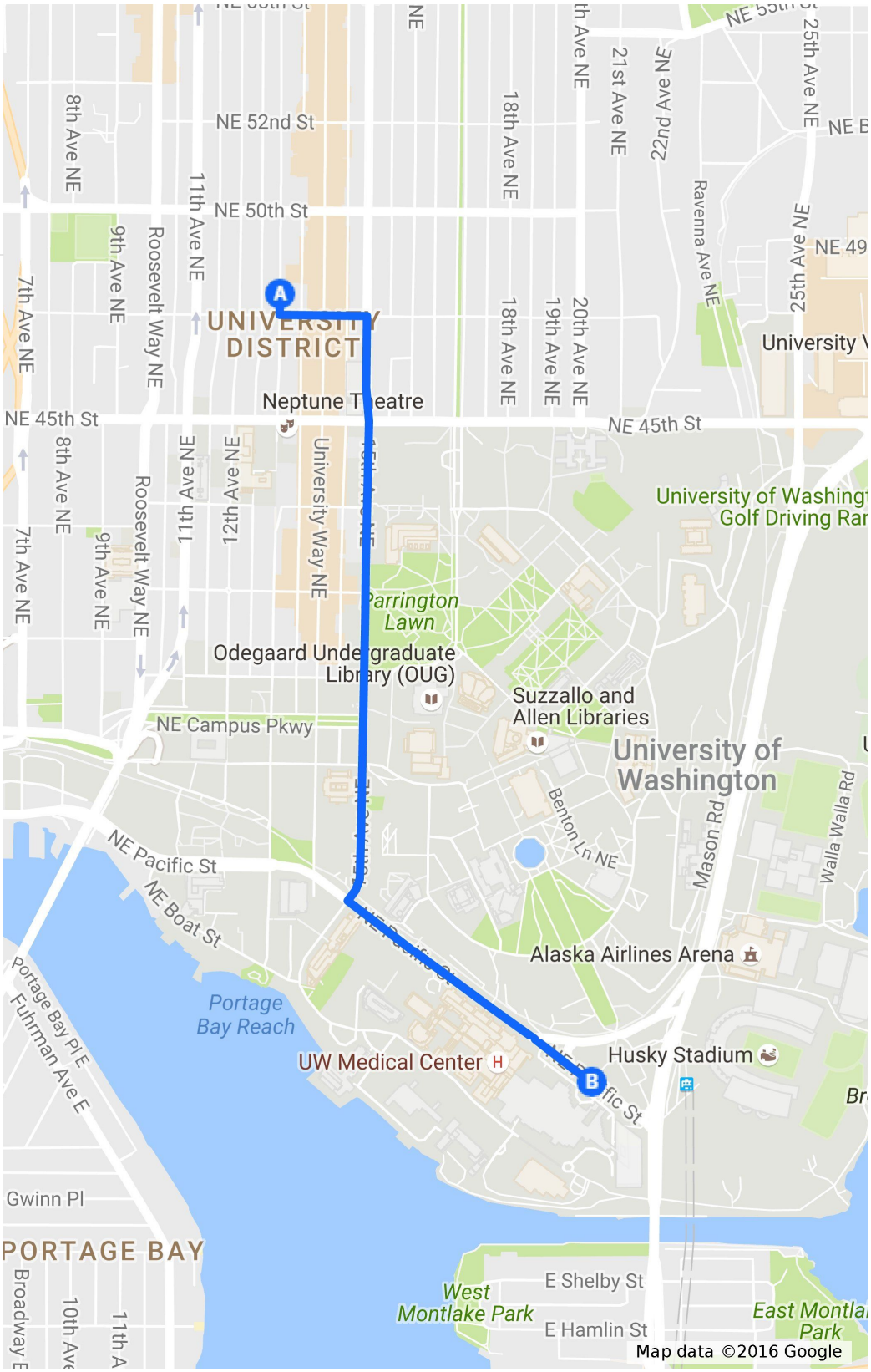
Turn **left** onto **NE Pacific St**

0.276 mi

Continue straight to stay on **NE Pacific St**Destination will be on the right

459 ft

B 2180 NE Pacific St, Seattle, WA 98195, USA



APPENDIX E

SEPA Checklist

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

***Instructions for applicants*:**

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals: [help]

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [help]

1. Name of proposed project, if applicable: [help]

   4700 Brooklyn Ave NE Interim Action

2. Name of applicant: [help]

   FH Brooklyn, LLC

3. Address and phone number of applicant and contact person: [help]

2251 Linda Flora Drive
Los Angeles, CA 91403
310-903-3141
Contact Person: Eran Fields

4. Date checklist prepared: [help]
September 8, 2017

5. Agency requesting checklist: [help]
State of Washington Department of Ecology (Ecology)

6. Proposed timing or schedule (including phasing, if applicable): [help]
March 2018

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. [help]
Yes. Construction of an apartment building is planned upon completion of this interim cleanup action. A separate SEPA checklist for construction of an apartment building was prepared in October 2015 for City of Seattle DPD and has received a Determination of Non-Significance. With the recent rezoning of this Site location, a SEPA checklist updated with the new building design may be submitted, if neccesary.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. [help]
Remedial Investigation Work Plan, 4700 Brooklyn Avenue NE, Seattle, WA, November 4, 2016 (Preliminary Draft). This document provides a summary of previous environmental investigations and cleanup actions, and describes scope for additional remedial investigation completed in November 2016.

On-Property Remedial Investigation Data Report, 4700 Brooklyn Avenue NE, Seattle, WA, January 17, 2017 (FINAL). This document provides the results of environmental investigations described in the Work Plan and serves as the primary basis for the planned Interim Removal Action.

Site-Wide Remedial Investigation Work Plan, 4700 Brooklyn Avenue NE, Seattle, WA, Submitted May 26, 2017. This document describes scope for soil and groundwater investigations necessary to complete the Remedial Investigation for the Site.

Interim Action Work Plan, 4700 Brooklyn Avenue NE, Seattle, WA, August 18, 2017 (Agency Draft). Public Review Draft Expected November 2017. This document will provide design details associated with the Interim Removal Action.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. [help]
No.

10. List any government approvals or permits that will be needed for your proposal, if known. [help]

The interim cleanup action will be conducted under Agreed Order No. 13815 between Ecology and the Potentially Liable Persons: FH Brooklyn LLC and Chevron Environmental Management Company. The Agreed Order requires that an Interim Action Work Plan (IAWP) be prepared and submitted for both Ecology and public review. Ecology must approve the IAWP before the interim cleanup action can be implemented.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.) [help]

Releases from a gasoline service station, which operated on the property for nearly 100 years, have contaminated the subsurface of this 0.38-acre property. The purpose of the interim cleanup action is to remove on-property soil and ground water contamination. Shoring walls will be installed around the property perimeter, and dewatering will lower the ground water table (typically observed at depths of 15 to 19 feet below grade) so that contaminated soils can be excavated and transported off site for treatment/disposal. Extracted ground water will be pretreated on site and discharged to the sanitary sewer. The excavation will be backfilled with clean fill to the sub-grade necessary for construction.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. [help]

Northeast corner of Brooklyn Avenue NE and NE 47th Street in Seattle, Washington.
PIN #8816400985
University Heights Add Plat Block: 7 Plat Lot: 16-19

B. ENVIRONMENTAL ELEMENTS [help]

1. Earth [help]

a. General description of the site: [help]

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other __Relatively flat___

b. What is the steepest slope on the site (approximate percent slope)? [help]

1.25%

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils. [help]

Shallow soils consist of fine to medium sand with silt and occasional gravel, grading from loose to dense with depth. Stiff to hard gray silt has been logged at depths of 27 to 33 feet below ground surface (bgs).

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. [help]

No.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill. [help]

The excavation will be extended to approximately 25 ft bgs, necessary to remove all soils with contaminant concentrations exceeding Washington State Model Toxics Control Act (MTCA) Method A cleanup levels. An estimated total 25,000-30,000 tons of soil will be excavated and transported off-site. Less than 5,000 tons of soil will be imported for fill – the source of fill is not finalized at this time and is subject to geotechnical and environmental tests to verify suitability.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. [help]

No. Erosion control Best Management Practices (BMPs) will be in place. Further, all excavation will occur below the surrounding grade of the Site vicinity.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? [help]

Zero percent after completion of the interim cleanup action. 100% after redevelopment. (Refer to Item A7.)

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: [help]

Establishing a quarry spall construction entrance.
Installing siltation control fencing on the downhill side of work areas.
Covering soil stockpiles with anchored plastic sheeting.

2. Air [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known. [help]

During construction there will be emissions from standard construction equipment and from excavated contaminated soils (volatile petroleum hydrocarbons).

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. [help]

No.

c. Proposed measures to reduce or control emissions or other impacts to air, if any: [help]

To the extent possible, excavated contaminated soils will be direct-loaded into dump trucks and immediately removed from the site. Air monitoring will be conducted, and additional measures (e.g., vapor suppression foam) will be used if needed to control volatile petroleum hydrocarbon emissions.

3. **Water** [help]

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. [help]

No.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans. [help]

No.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. [help]

Not applicable.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. [help]

No.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan. [help]

No.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge. [help]

No.

b. Ground Water:

1) Will ground water be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to ground water? Give general description, purpose, and approximate quantities if known. [help]

During construction, ground water will be withdrawn from perimeter well points and sump pumps for the purpose of lowering the ground water table so that soils can be excavated. The water will be pretreated onsite and discharged to sanitary sewer under a King County Industrial Waste (KCIW) discharge authorization. No water will be discharged to ground water.

King County issued Wastewater Discharge Authorization No. 4422-01 for this project. The permit requires detailed project information including the process generating the wastewater, contaminants in the water, the planned pretreatment processes, frequency of discharge, discharge point and maximum daily discharge. A maximum discharge of 65 gallons per minute (gpm) is the limit for the sanitary sewer line to be used during the project. The pre-treatment will include an oil/water separator, bag filter and activated carbon prior to discharge.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. [help]

Not applicable.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe. [help]

Any water collecting in the excavation (including storm water) will be pretreated onsite and discharged to sanitary sewer.

2) Could waste materials enter ground or surface waters? If so, generally describe. [help]

No. The combination of perimeter well points and sump pumps in the excavation will ensure that waste liquids are captured and routed to the onsite treatment system.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe. [help]

No.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any: [help]

As noted above, the combination of perimeter well points and sump pumps in the excavation will capture contaminated ground water and storm water falling in the excavation, and route them to an onsite pre-treatment system and sanitary sewer discharge.

4. **Plants** [help]

a. Check the types of vegetation found on the site: [help]

____deciduous tree: alder, maple, aspen, other
____evergreen tree: fir, cedar, pine, other
____shrubs
____grass
____pasture
____crop or grain
____ Orchards, vineyards or other permanent crops.
____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____water plants: water lily, eelgrass, milfoil, other
____other types of vegetation

b. What kind and amount of vegetation will be removed or altered? [help]

None.

c. List threatened and endangered species known to be on or near the site. [help]

Not applicable.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: [help]

Not applicable to interim cleanup action.

e. List all noxious weeds and invasive species known to be on or near the site. [help]

Not applicable.

5. **Animals** [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. [help]

Examples include:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other _____

Numerous bird species are present in the vicinity of the Site including songbirds, migratory birds, falcons and eagles.

b. List any threatened and endangered species known to be on or near the site. [help]

None.

c. Is the site part of a migration route? If so, explain. [help]

No.

d. Proposed measures to preserve or enhance wildlife, if any: [help]

None.

e. List any invasive animal species known to be on or near the site. [help]

None.

6. **Energy and Natural Resources** [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc. [help]

Not applicable to interim cleanup action.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. [help]

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: [help]

Not applicable to interim cleanup action.

7. **Environmental Health** [help]

1. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal?
   If so, describe. [help]
   Potential for inhalation exposure to volatile petroleum hydrocarbons.

Potential for direct contact exposure to petroleum hydrocarbons (construction workers).
Risk of fire/explosion.

1) Describe any known or possible contamination at the site from present or past uses. [help]

The site operated as a retail gas station since before 1920 through October 2016. Site soil and ground water are known to be contaminated with petroleum hydrocarbons including separate-phase product (e.g., weathered gasoline). The January 17, 2017 On-Property Remedial Investigation Data Report (Aspect, 2017) describes the current contamination present at the Site.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity. [help]

The site operated as a retail gas station since before 1920 through October 2016. Site soil and ground water are known to be contaminated with petroleum hydrocarbons including separate-phase product (e.g., weathered gasoline). There are no other known hazardous chemicals/conditions that might affect project development and design.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project. [help]

Separate-phase product (e.g., weathered gasoline) may be extracted from the perimeter well points along with ground water. The pretreatment system will be designed to segregate and safely store separate-phase product pending offsite transport and disposal/recycle.

4) Describe special emergency services that might be required. [help]

911 for construction-related injuries.

5) Proposed measures to reduce or control environmental health hazards, if any: [help]

Air monitoring will be conducted to ensure protection against both unacceptable inhalation exposures and fire/explosion potential (i.e., lower explosive limit [LEL] monitoring).

All persons performing Site activities where they may contact hazardous materials, including petroleum hydrocarbon-impacted soil or ground water, will have completed Hazardous Waste Operations and Emergency Response (HAZWOPER) training in accordance with the Occupational Safety and Health Administration Part 1910.120 of Title 29 of the Code of Federal Regulations, and be in possession of a current HAZWOPER certification card.

All work will be performed in accordance with the contractor's site-specific health and safety plan (HASP). The HASP includes guidelines to reduce the potential for injury, 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 generated waste. The general contractor will operate under its own HASP, as will any subcontractor performing site activities where hazardous materials may be contacted.

A safety meeting will be conducted prior to the start of each workday to inform workers of changing work conditions, and to reinforce key safety requirements.

1. Noise [help]

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? [help]

General traffic.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site. [help]

Short-term construction noise. Construction will be limited to 7am-7pm on weekdays and between 9am and 7 pm on weekends per the City-approved Construction Management Plan.

3) Proposed measures to reduce or control noise impacts, if any: [help]

Construction will be limited to 7am-7pm on weekdays and between 9am and 7 pm on weekends per the City-approved Construction Management Plan.

8. **Land and Shoreline Use** [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. [help]

The site is currently vacant. A Safeway is on adjacent property to the north, with associated surface parking and an alley.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use? [help]

No.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how: [help]

Not applicable.

c. Describe any structures on the site. [help]

1-story convenience store and gas station (no longer in operation).

d. Will any structures be demolished? If so, what? [help]

Yes; convenience store and gas station

e. What is the current zoning classification of the site? [help]

Seattle Mixed U-District (SM-U 75-240)

f. What is the current comprehensive plan designation of the site? [help]

Mixed Residential and Commerical

g. If applicable, what is the current shoreline master program designation of the site? [help]

Not applicable.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify. [help]

Not applicable.

i. Approximately how many people would reside or work in the completed project? [help]

Not applicable to interim cleanup action.

j. Approximately how many people would the completed project displace? [help]

None

k. Proposed measures to avoid or reduce displacement impacts, if any: [help]

No measures neccesary

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: [help]

Not applicable to interim cleanup action.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any: [help]

Not applicable.

9. **Housing** [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. [help]

Not applicable to interim cleanup action.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. [help]

Not applicable to interim cleanup action.

c. Proposed measures to reduce or control housing impacts, if any: [help]

Not applicable to interim cleanup action.

10. **Aesthetics** [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? [help]

Not applicable to interim cleanup action.

b. What views in the immediate vicinity would be altered or obstructed? [help]

Not applicable to interim cleanup action.

b. Proposed measures to reduce or control aesthetic impacts, if any: [help]

Not applicable to interim cleanup action.

11. **Light and Glare** [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur? [help]

Not applicable to interim cleanup action.

b. Could light or glare from the finished project be a safety hazard or interfere with views? [help]

Not applicable to interim cleanup action.

c. What existing off-site sources of light or glare may affect your proposal? [help]

Not applicable to interim cleanup action.

d. Proposed measures to reduce or control light and glare impacts, if any: [help]

Not applicable to interim cleanup action.

12. **Recreation** [help]

a. What designated and informal recreational opportunities are in the immediate vicinity? [help]

Not applicable to interim cleanup action.

b. Would the proposed project displace any existing recreational uses? If so, describe. [help]

Not applicable to interim cleanup action.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: [help]

Not applicable to interim cleanup action.

13. **Historic and cultural preservation** [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe. [help]

No.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources. [help]

No.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc. [help]

Consultation with the State Department of Archaeology and Historic Preservation (DAH) including a query of the online database was performed. Historic maps and available GIS data was reviewed to determine no potential impacts to cultural and historic resources would result from this project.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required. [help]

Not applicable.

14. **Transportation** [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any. [help]

Site is approximately seven blocks from two separate entrances to Interstate I-5 (i.e., at NE 45th Street and NE 50th Street).

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop? [help]

The Site is served by Seattle public buses however the project will not impact any transit stops. The sidewalks will be closed during the project; however safe pedestrian access and pathways will be maintained throughout the project.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate? [help]

Not applicable to interim cleanup action.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private). [help]

Widening of the alley.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. [help]

Rail may be used to haul excavated soils from transfer station to landfill.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates? [help]

Approximately 20 vehicular trips per day will be associated with the interim cleanup action. An estimated 10 of these will be trucks hauling contaminated soil from the property to the disposal locations.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe. [help]

Not applicable.

h. Proposed measures to reduce or control transportation impacts, if any: [help]

A traffic control plan will be implemented to minimize transportation impacts during the interim cleanup action. The traffic control plan will be submitted to the City for review.

15. **Public Services** [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe. [help]

Not applicable to interim cleanup action.

b. Proposed measures to reduce or control direct impacts on public services, if any. [help]

The Site is served by Seattle public buses however the project will not impact any transit stops. The sidewalks will be closed during the project; however safe pedestrian access and pathways will be maintained throughout the project.

16. **Utilities** [help]

a. Circle utilities currently available at the site: [help]
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

Electricity, natural gas, water, refuse service, telephone, and sanitary sewer are currently available.

c. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. [help]

Interim cleanup action will use sanitary sewer for discharge of pretreated water. King County issued Wastewater Discharge Authorization No. 4422-01 for this project. The permit requires detailed project information including the process generating the wastewater, contaminants in the water, the planned pretreatment processes, frequency of discharge, discharge point and maximum daily discharge. A maximum discharge of 65 gallons per minute (gpm) is the limit for the sanitary sewer line to be used during the project. The pre-treatment will include an oil/water separator, bag filter and activated carbon prior to discharge.

C. Signature [help]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Eran

Name of signee Eran Fields

Position and Agency/Organization Managing Member of Manager /FH Brooklyn, LLC

Date Submitted: 9/08/2017

D. supplemental sheet for nonproject actions [help]

(**IT IS NOT NECESSARY** to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or

at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

A short-term increase in volatile petroleum hydrocarbon emissions to air will occur as contaminated soil is excavated. There will also be diesel emissions from construction equipment and trucks, as well as the potential for dust generation.

Proposed measures to avoid or reduce such increases are:

To the extent possible, excavated contaminated soils will be direct-loaded into dump trucks and immediately removed from the site. Air monitoring will be conducted, and additional measures (e.g., vapor suppression foam) will be used if needed to control volatile petroleum hydrocarbon emissions. Dust control measures (e.g., water spraying) will also be implemented if necessary. Construction activities will comply with all rules and regulations of air emissions reduction standards.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Not applicable.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

None.

3. How would the proposal be likely to deplete energy or natural resources?

Not applicable.

Proposed measures to protect or conserve energy and natural resources are:

None.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Not applicable.

Proposed measures to protect such resources or to avoid or reduce impacts are:

None.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Not applicable.

Proposed measures to avoid or reduce shoreline and land use impacts are:

None.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

The Site is served by Seattle public buses however the project will not impact any transit stops. The sidewalks will be closed during the project; however safe pedestrian pathways will be maintained throughout the project.

Proposed measures to reduce or respond to such demand(s) are:

None.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

The interim cleanup action is being conducted for the express purpose of removing subsurface contamination in accordance with MTCA, thereby addressing protection of the environment.

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