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September 4, 2015  
Adapt Project No. WA15-14908-VCP

**State of Washington Department of Ecology  
Northwest Regional Office (NRO)**

3190 160<sup>th</sup> Avenue Southeast  
Bellevue, Washington 98008-5452

Attention: Ms. Diane Escobedo, VCP Site Manager

Subject: Additional Phase II Environmental Site Assessment Work Plan  
United Services (aka, Mooers Buildings Associates, LLC Property)  
3450 16<sup>th</sup> Avenue West  
Seattle, Washington 98119  
Facility/Site No.: 2190  
VCP No.: NW1887

Dear Ms. Escobedo:

Adapt Engineering (Adapt) is pleased to provide you with the proposed Additional Phase II Environmental Site Assessment (ESA) Work Plan (Work Plan) for the above referenced site. This was completed for review and comment as requested by the State of Washington Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP).

If you have any questions, or if we can be of further assistance to you, please contact us at (206) 654-7045.

Respectfully Submitted,

**Adapt Engineering**

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John T. Bhend, L.G.  
Senior Project Manager

JTB/jtb

cc: Ray and Sue Mooers, Mooers Building Associates, LLC

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## **1.0 INTRODUCTION**

### **1.1 Site Description and Background**

The subject property (Site) is located at 3450 16th Avenue West in Seattle, Washington (Section 14, Township 25 North, Range 3 East, Willamette Meridian). The Site is situated at the southeast corner of 16th Avenue West and Thorndyke Avenue West.

The Site is located within an area of light industrial and commercial development. The Site had been operated as a distribution and light maintenance facility for taxicabs from about 1992 to 1997. The Site currently supports one multi-story light industrial building which is used as a wood instrument manufacturing facility and for commercial offices. The northern portion of the Site is used as a paved asphalt parking lot.

### **1.2 Prior Environmental Assessments and Remedial Actions**

The following prior subsurface environmental assessment and remedial actions have been completed at the Site and are briefly described in the following paragraphs.

#### Laidlaw Environmental Services, Inc. Surface Soil Removal Activities (March of 1998)

Laidlaw Environmental Services, Inc. (LES) reportedly removed approximately 77 tons of visibly stained surface soils from the Site ranging in depth from approximately six inches to three feet below established grade in March of 1998. The reports also concluded that “Probably as a result of past vehicle maintenance activities, site soils and groundwater were found to contain elevated levels of total petroleum hydrocarbons (TPH) and polynuclear aromatic hydrocarbons (PAHs)”.

#### Nowicki & Associates Soil Sampling Assessment (November of 1998)

In November of 1998, Nowicki & Associates analyzed shallow soils (at depths of approximately 8 inches below grade) at forty-eight locations across the Site. Forty-eight samples were analyzed using Thin Layer Chromatograph (TLC) and two samples collected at the locations of the two highest TLC readings were analyzed for diesel and heavy oil range TPH. Heavy oil range TPH was detected in two samples, but at concentrations below the current State of Washington Model Toxics Control Act (MTCA) Method A Soil Cleanup Levels (CUL).

#### Adapt Limited Phase II Subsurface Characterization (November of 1999)

In November 1999, Adapt completed a Limited Phase II Subsurface Characterization which consisted of the sampling and analytical testing of soil samples collected from a total of eleven direct push borings completed at the Site. The findings of the November 1999 subsurface characterization indicated that soil at the Site was contaminated with diesel and heavy oil range TPH and PAHs at concentrations above the MTCA Method A CULs. The preliminary findings of the November 1998 subsurface characterization also suggested that the impacted soil appeared to be primarily limited to the Site.

#### Adapt Limited Phase II Groundwater Characterization (January of 2000)

In January of 2000, Adapt completed a Limited Phase II Groundwater Characterization which consisted of the collection and analytical testing of one groundwater sample from one groundwater monitoring well installed near the northern portion of the Site. The findings of the January of 2000 groundwater characterization indicated that groundwater at the Site was

contaminated with diesel and heavy oil range TPH and PAHs at concentrations above the MTCA Method A Groundwater CULs.

#### Voluntary Cleanup Program Submittal (April 26, 2000)

On April 26, 2000, Adapt prepared and submitted the applicable paperwork to enter the site into Ecology's Voluntary Cleanup Program (VCP). Adapt requested a No Further Action (NFA) letter, with restrictive covenants, from Ecology for the Site, with the assumption that Site soil conditions met the criteria established for site closure as provided by the Washington Department of Ecology's Interim TPH policy and the MTCA and that risk-based calculations indicated existing on-site concentrations of PAHs in groundwater did not pose unacceptable levels of risk to future Site development.

Ecology responded to Adapt's request for a NFA letter in their response letter dated August 15, 2000. In summary, Ecology indicated that additional work was necessary to further address the residual impacts to soil and groundwater. Ray and Sue Mooers with Mooers Building Associates, LLC, the owners of the Site, received a letter from Ecology, dated May 14, 2007, which stated that Ecology has removed the Site from the VCP.

#### Adapt Groundwater Sampling and Voluntary Cleanup Program Re-Submittal (2007)

Based upon Ecology's decision to remove the site from the VCP, Adapt performed one supplemental groundwater monitoring event in October 2007 and resubmitted the site into the VCP. The VCP re-submittal package included the Voluntary Cleanup Program Submittal and Supplemental Groundwater Monitoring Report, dated December 7, 2007, which documented the past environmental assessment and cleanup work completed at the Site and the sampling results from the supplemental groundwater monitoring event completed in October 2007. This report stated the following: *"Based on the observed groundwater sampling results and groundwater level measurements, it appears that a significant reduction in groundwater contamination levels has occurred at the subject site and that the extent of the groundwater impacts at concentrations above the MTCA Method A Groundwater Cleanup Levels appear to be predominantly confined to the limits of the subject site. While isolated areas of petroleum related impacts to soil may currently exist at the subject site at locations beneath the existing manufacturing building, no significant potential impacts to human health or the environment are anticipated as these soils are capped by the building and the most recent groundwater sampling results appear to indicate impacts to groundwater are predominantly confined within the property boundary of the subject site."*

Ecology responded to the VCP resubmittal package in their opinion letter dated September 11, 2008. In summary, Ecology indicated that additional characterization for soil and groundwater contamination is needed for the site to qualify for a NFA determination. Representatives from Ecology, Mooers Building Associates, LLC, and Adapt met on May 14, 2009 to discuss a "step-by-step" approach to work toward completing a Remedial Investigation (RI) and Feasibility Study (FS), with the ultimate goal of obtaining a No Further Action (NFA) determination from Ecology for the Site.

#### Adapt Supplemental Phase II Environmental Site Assessment (2009)

The initial step, designated to consist of completion of one groundwater monitoring event from the existing monitoring wells at the subject property, was completed in June 2009. The results of the June 2009 groundwater sampling event appeared to indicate that groundwater at the Site was still contaminated with diesel and heavy oil range TPH and PAHs at concentrations above

the MTCA Method A Groundwater CULs and, based on discussions with Ecology, they indicated that the full lateral extent of impacts had not been fully assessed.

The second step consisted of the completion of a Supplemental Phase II ESA. The Supplemental Phase II ESA consisted of the advancement of seven (7) additional borings around the perimeter of the existing Site building to further assess the lateral extent of petroleum hydrocarbon impacts to soil located beneath the existing site building and also consisted of the installation and sampling of two (2) additional monitoring wells to further assess the up-gradient and down-gradient extent of petroleum hydrocarbon impacts to groundwater. This work was completed in September 2009. The results of this Supplemental Phase II ESA appeared to indicate that the lateral and vertical extent of contaminated soil had been fairly well assessed, with exception to an area located along the southern and northeastern portions of the Site. The findings of the sampling activities indicated that the groundwater contaminant plume appeared to have migrated off-site in a westerly to northwesterly direction, with the leading edge of the dissolved contaminant plume, as defined by contaminant concentrations in excess of the MTCA Method A Groundwater Cleanup Levels, likely terminating somewhere between the location of monitoring well MW-2 and the western edge of Thorndyke Avenue West. The up-gradient limit of the groundwater contaminant plume had not been fully assessed, but is assumed to be located somewhere beneath the steep tree and brush covered slope located immediately to the east of the Site.

Additionally, review of available subsurface soil and groundwater sampling data from an adjacent former gasoline station site, located directly east, and in an inferred up-gradient direction of the Site, prompted Adapt to recommend submitting the next round of groundwater samples collected from the on-site up-gradient monitoring well, MW-6, for gasoline range TPH and BTEX (i.e., benzene, toluene, ethylbenzene, and xylenes) to further evaluate if groundwater contamination is potentially migrating on-site from the adjacent former gasoline station site.

#### Adapt Groundwater Monitoring Report – January 2011 Sampling Event

In January of 2011, Adapt completed a groundwater sampling event which consisted of the collection and analytical testing of groundwater samples from the six on-site and off-site monitoring wells (i.e., MW-1 through MW-6). The findings of the recently completed groundwater monitoring activities indicate that the down-gradient and up-gradient extent of the observed petroleum hydrocarbon impacts to groundwater have been adequately assessed based on evaluation of the groundwater analytical testing results that include the silica gel cleanup preparation method. The use of the silica gel cleanup preparation method, prior to the diesel and motor oil TPH analyses, is warranted for this site based on the current and prior observations of apparent biogenic interferences, as indicated by the laboratory chemist on the analytical test data reports.

The leading edge of the dissolved contaminant plume, as defined by detected contaminant concentrations, appears to terminate somewhere between the locations of monitoring well MW-1 and monitoring wells MW-2 and MW-3 located along the western boundary of the Site. The up-gradient limit of the dissolved contaminant plume, as defined by detected contaminant concentrations, appears to terminate somewhere between the locations of monitoring well MW-1 and monitoring well MW-6 located along the eastern boundary of the Site. Also, based on no detectable concentrations of gasoline range TPH and BTEX being observed in the sample collected from MW-6, it is unlikely that there are any significant levels of groundwater

contamination migrating on-site from the adjacent property located directly to the east of the Site.

Adapt submitted a copy of the January 2011 Groundwater Monitoring Report to Ecology with a Request for Opinion Form to solicit Ecology's opinion regarding the sufficiency of the subsurface environmental assessment activities completed to date. Mr. Dale Myers, the Ecology site manager at the time, provided a written opinion in the form of a Request for Review of Remedial Investigation letter, dated October 5, 2011. In this letter, Ecology indicated the following:

*...Ecology has determined that, at this time:*

- 1. It appears that the petroleum hydrocarbon plume has been sufficiently characterized.*
- 2. Sufficient data has been compiled in order to complete the Remedial Investigation study and to perform the Feasibility Study...*

#### Adapt Draft Feasibility Study – August 2012

In August of 2012, Adapt completed a Feasibility Study (FS) which developed and evaluated cleanup action alternatives to enable a preferred cleanup action to be selected for the Site. The following two (2) cleanup action alternatives were selected for evaluation:

- Alternative 1 – Completed Remedial Activities, Use of Institutional Controls, and Monitored Natural Attenuation
- Alternative 2 – Completed Remedial Activities and In-Situ Treatment of Soil and Groundwater

The findings of the draft FS recommended the selection of Alternative 1.

Adapt submitted a copy of the FS to Ecology in 2012 with a Request for Opinion Form to solicit Ecology's opinion regarding the recommended cleanup action alternative for the Site. While the FS was submitted to Ecology in August 2012, Ecology did not respond with an opinion letter until October 2014, and the Site had been reassigned to a new site manager. Ms. Diane Escobedo, the new Ecology site manager, provided a written opinion in the form of a Request for Review of Remedial Action letter, dated October 16, 2014. In this letter, Ecology indicated the following:

*...Ecology has determined:*

- Ecology does not have sufficient information at this time to make a determination regarding the proposed alternatives and selection of a cleanup action for the Site. Additional Site background and characterization, as detailed in this opinion letter, is needed prior to selection of a cleanup action.*
- Additional detail regarding the location of vehicle maintenance areas and hazardous waste disposal practices and storage locations are needed to develop a Site conceptual model. Vehicle maintenance activities are stated as a probable source of contamination. It is unknown what activities were conducted in the former covered bay/former garage building. Did maintenance activities occur in both the bay and the garage? How was the waste oil disposed of? Include an illustration of the locations of any dry wells/service pits relative to boring locations. Also, include the location of former vehicle maintenance areas that were reportedly located near the central, southern and northeastern portions of the Site.*

- *The lateral extent of soil contamination is not known west/ south/ east of P-14. In addition, the soil samples collected from P-14 were analyzed outside of the laboratory hold time and therefore may not be representative of conditions at the time samples were collected. Additional representative soil samples are needed to delineate the extent of TPH-d, TPH-o and cPAHs.*
- *Based on soil concentrations, it appears contamination extends beyond the Property boundary in the vicinity of P-18/MW-6. The concentrations of cPAHs detected at 5.5 to 7 feet bgs was 2.61 mg/kg, which exceeds the MTCA Method A cleanup level. The extent of cPAH contamination has not been delineated beyond P-18/MW-6.*
- *Prior to determining if monitored natural attenuation is an appropriate cleanup action for this Site, it needs to be demonstrated that natural attenuation processes are ongoing on the Site and that the ground water plume is stable or shrinking. The 2011 ground water sampling event does indicate degradation of petroleum products has occurred at the Site since the previous sampling event in 2009; however, at least four consecutive quarterly sampling events which include collection of geochemical indicators (such as dissolved oxygen, nitrate, dissolved manganese, ferrous iron, sulfate, methane, alkalinity, redox potential, pH, conductivity, temperature) are needed to assess ground water conditions and seasonal fluctuations before it can be determined that the Site conditions are conducive to further biodegradation. A minimum of one monitoring well within the source (most impacted area) is needed. If building constraints do not allow for installation within the source area, an additional well location should be proposed as close as possible to the source area.*
- *Typically, Ecology does not accept the use of silica gel cleanup for NWTPH-Dx analyses unless uncontaminated background samples indicate that naturally-occurring organic matter is a significant component of the TPH detected in ground water (see Ecology publication No. 10-09-057 Guidance for Remediation of Petroleum Contaminated Sites for more detail). Further justification is needed prior to Ecology accepting the use of silica gel cleanup for ground water samples collected at this Site.*
- *Although the Site is located in an industrial area, access to the Property is not restricted. Soil cleanup levels suitable for unrestricted land use are therefore applicable to this Site. MTCA Method A clean up levels for unrestricted land use were selected for soil at this Site which are protective for the direct contact and leaching pathways. This is an appropriate cleanup standard for this Site.*
- *This Site qualifies for a Terrestrial Ecological Evaluation exclusion based on the absence of more than 1.5 contiguous acres of undeveloped land on or within 500 feet of any area of the Site in accordance with WAC 173-340-7491(1)(c). Land use at the Site and surrounding area make substantial wildlife exposure unlikely.*
- *The MTCA Method A ground water cleanup levels were deemed applicable and appropriate for this Site. The cleanup levels were established for ground water based on its use as a potential drinking water source.*
- *Prior to Ecology's consideration of a Property NFA determination, ground water samples will need to be in compliance with cleanup levels established for the Site for a minimum of four consecutive quarters at the established points of compliance for the Property.*

## **2.0 OBJECTIVES**

The purpose of the proposed Additional Phase II ESA is to provide further detail regarding the location of vehicle maintenance areas, hazardous waste disposal practices, and hazardous waste storage locations to further develop the Site conceptual model and also to further assess soil and groundwater at the Site in the areas and for the chemical parameters requested by Ecology.

While it is Adapt's opinion that the scope of work for this proposed Additional Phase II ESA should be sufficient to fully address Ecology's items listed above for further study or clarification, in the event significant contamination is observed at concentrations above the MTCA Soil and Groundwater CULs, additional subsurface assessment work may be needed. In this case, Adapt would consult with Ecology to expand the scope of work to fully evaluate the vertical and lateral extent of impacts.

## **3.0 SCOPE OF WORK**

### **3.1 Site Conceptual Model Development**

Adapt will further research the location of vehicle maintenance areas and hazardous waste disposal practices and storage locations. The locations of historic floor drains, catch basins, and former vehicle maintenance areas will be illustrated on a revised site plan.

### **3.2 Health and Safety Plan & Utility Locate Activities**

#### Health and Safety Plan

A site-specific health and safety plan will be prepared prior to initiation of any site activities in accordance with 29 CFR 1910.120 and 296-62-300 WAC. Adapt would modify the existing health and safety plan to account for potential conditions on the property.

#### Underground Utility Locate

To avoid damaging subsurface utilities and creating potential life threatening conditions, the Underground Utilities Locating Center of Washington will be requested to locate all subsurface utilities at or near the site prior to drilling. Also, a private locate company will be contracted to locate those private utilities that, by policy, the public company will not locate.

### **3.3 Direct Push Borings and Soil Sampling**

Adapt proposes to advance five (5) additional direct push borings to depths up to approximately 10 feet below ground surface (bgs), or to the encounter of groundwater, at the locations shown on the attached Figure 1 (Proposed Exploration Plan).

The explorations will be completed using a direct push drill rig that is owned and operated by a local drilling firm. Soil samples would be collected continuously from the site explorations through the use of a Macro-Core® sampler, which consists of a stainless steel probe rod with an inner clear PVC liner in which the soil sample is collected or a stainless steel split-spoon sampler in which the soil sample is collected. All sampling equipment will be thoroughly cleaned prior to and after each sampling episode. All soil removed by the drilling and all decontamination waste water will be placed in 20-gallon drums and stored on-site. Upon completion of the soil sampling, the boreholes will be filled with bentonite up to a depth of



approximately 1 foot bgs. Soil will be placed over the bentonite and the surfacing material at each boring location will be replaced with the original surfacing material.

Recovered soil samples will be collected from each exploration for description, screening, observation for field indications (visual and olfactory) of impact and quantitative laboratory analyses. Discrete soil sample for non-volatile compounds will be collected using a clean stainless steel trowel or gloved hand and transferred to a clean 4 ounce glass jar with a Teflon® lined lid. The jars will be filled minimizing headspace. A field split will then be allowed to sit in a warm environment for approximately 5 to 10 minutes. The resulting headspace will be screened by inserting a Photoionization detector (PID) probe into the sample container. The PID screen will provide a qualitative assessment of total volatile organic constituent concentration in the sample headspace and provide a basis for selection of samples to be submitted for quantitative laboratory analyses. The samples would then be stored at 4 degrees C, and transported as soon as possible to a subcontracted analytical laboratory under Adapt's chain-of-custody procedures.

### **3.4 Hollow Stem Auger Borings and Monitoring Well Installation**

Adapt proposes to advance one (1) hollow stem auger borings to a depth of approximately 16 feet bgs at the location shown on the attached Figure 1 (Proposed Exploration Plan).

The hollow stem auger borings will be completed using a limited access mobile drill rig that is owned and operated by a local drilling firm. Soil samples will be collected at 5-foot intervals by using the Standard Penetration Test Procedure, as described in ASTM: D-1586. This test and sampling method consists of driving a standard 3-inch outside diameter split-spoon sampler a distance of 18 inches in the soil with a 140-pound hammer free falling a distance of 30 inches. All drilling equipment will be thoroughly cleaned prior to and after each sampling episode. All soil removed by the drilling and all decontamination waste water will be placed in 55-gallon drums and stored on-site.

The hollow stem auger boring will be completed as a 1-inch diameter PVC groundwater monitoring well. The well will be constructed with up to 10 feet of 0.010-inch slotted PVC screen. The exact screen position will be determined in the field based on field observations and groundwater levels. The well will be completed flush to grade with a traffic rated monument and the well head will be secured with a locking airtight cap.

The new well will be developed using either a surge and bail technique or submersible development pump at least 24 hours after installation of each well. Prior to the start of well development activities, depth to groundwater will be measured using an electronic water level meter. A minimum of 5 to 8 casing volumes will be removed during development procedures. The well will be developed to remove suspended sediment and to insure good hydraulic communication between the well and saturated formation. Development also insures collection of representative groundwater samples.

### **3.5 Groundwater Sampling**

Groundwater sampling will be conducted from the new and existing groundwater monitoring wells. In order to increase the probability that representative groundwater samples are collected free of suspended sediment which may influence analytical results, Adapt proposes to collect groundwater samples from the wells using low flow purging techniques to minimize the

potential to disturb sediment which may have built up in the bottom of the well and to minimize the potential to induce sediment migration from the well filter pack into the well. A peristaltic pump or equivalent will be used if the observed water levels are shallow enough. If the observed water levels are too deep to allow use of a peristaltic pump, samples will be collected from the wells using a positive pressure bladder pump. Prior to sampling, each well will be purged until indicator parameters (e.g., temperature, specific conductance, pH, dissolved oxygen, and redox potential) indicate well concentrations have stabilized or, failing that, a minimum of 3 to 5 well volumes has been removed.

Samples for TPH-Dx and cPAH analyses will be collected in laboratory prepared 1,000 mL amber glass containers with polyethylene closures and septums. Samples for monitored natural attenuation parameters (e.g., nitrate, sulfate, alkalinity, manganese, ferrous iron) will be collected in laboratory prepared 500 mL polyethylene containers with polyethylene closures. The groundwater samples will then be stored at 4 degrees C, and transported as soon as possible to a subcontracted analytical laboratory under Adapt's chain-of-custody procedures.

### **3.6 Well Head Elevation Survey**

A differential leveling survey will be conducted to determine the relative elevation of the new proposed well head, and elevations will be referenced to Washington State datum of NAVD 88.

### **3.7 Investigation Derived Wastes**

Soil removed by the drilling, equipment decontamination waste water, and groundwater purged from the monitoring wells is to be stored in drums on the Site. Based on the number and potential depth of borings proposed, we estimate approximately one (1) 20-gallon drum of soil, one (1) 55-gallon drum of soil, one (1) 20-gallon drum of water, and one (1) 55-gallon drum of water to be generated.

Laboratory analyses of the samples taken will indicate whether the stored materials are to be considered contaminated or not. Thus, once laboratory analyses are completed, an appropriate method of disposal of the stored materials can be determined and carried out. All drummed investigation derived wastes will be managed in accordance with the appropriate State of Washington Dangerous Waste Regulations [Chapter 173-303 Washington Administrative Code (WAC)]. If sampling results indicate elevated concentrations of chlorinated solvents or metals, a book-designation of potential dangerous waste under WAC 173-303-070 may be necessary to assess whether potentially contaminated soil or groundwater would likely be classified as a non-dangerous / non-hazardous waste for disposal purposes.

The following are possible waste disposal options, all based on the levels of potential detected contaminants:

- If laboratory analyses indicated no detectable levels of contamination in the collected soil and groundwater samples, the drummed water could be discharged to the ground surface on-site and the drummed soil could be thin spread across the ground surface without any regulatory restrictions.
- If laboratory analyses indicate no detectable levels of contamination in the collected soil and groundwater samples, but no suitable areas are available at the Site for disposal of

the drummed soil and water, it would be prudent to have the drummed soil and / or water transported to an appropriately licensed waste disposal / treatment facility.

- If laboratory analyses indicate detectable levels of contamination, either below or above the Ecology Model Toxics Control Act (MTCA) Method A regulatory cleanup levels, it would be prudent to have the drummed soil and / or water transported to an appropriately licensed solid waste facility.
- If laboratory analyses indicate elevated levels of chlorinated solvent or metal contamination that would be designated as a dangerous / hazardous waste by a formal book-designation per WAC 173-303-070, it would be prudent to have the drummed soil and / or water transported to an appropriately licensed dangerous/hazardous waste facility.

### **3.8 Analytical Testing**

Selected soil samples collected from the proposed direct push borings will be analyzed for the following compounds:

- Diesel and oil range TPH by Ecology Method NWTPH-Dx.
- Carcinogenic PAHs (cPAHs) by EPA Method 8270D

Groundwater samples collected from the one (1) proposed new monitoring well and six (6) existing monitoring wells will be analyzed for the following compounds:

- Diesel and oil range TPH by Ecology Method NWTPH-Dx (1<sup>st</sup> through 4<sup>th</sup> monitoring events).
- cPAHs by EPA Method 8270D (1<sup>st</sup> through 4<sup>th</sup> monitoring events).
- Nitrate and sulfate by EPA Method 300.0 (1<sup>st</sup> and 3<sup>rd</sup> monitoring events).
- Dissolved manganese by EPA Method 200.8 (1<sup>st</sup> and 3<sup>rd</sup> monitoring events).
- Ferrous iron by EPA Method SM 3500B (1<sup>st</sup> and 3<sup>rd</sup> monitoring events).
- Alkalinity by EPA Method SM 2320B (1<sup>st</sup> and 3<sup>rd</sup> monitoring events).

### **4.0 REPORTING**

The results of our field activities, laboratory analyses, and data evaluation would be presented in a written report that would include:

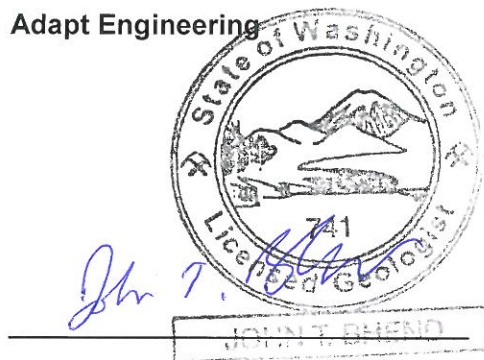
- A description of all activities performed on-site by Adapt;
- A description, if indicated, of any additional on-site concerns observed by Adapt;
- A site map indicating the general site features noted above and the approximate locations of all samples collected by Adapt;
- A description of soil and groundwater sampling procedures;
- Laboratory analysis procedures;
- A summary table of all analytical data, analytical laboratory testing results, and chain-of-custody forms; and

- Conclusions and recommendations for further assessment / characterization, if appropriate.
- Submittal of hard copies of the summary report to Ecology for review and comment. Also, all sampling data results dating back to August 2005 (including the most recent data) will be entered into Ecology's Environmental Information Management System (EIM).

We look forward to your timely review response. Should you have any questions concerning this report, or if we can assist you in any way, please contact us at (206) 654-7045.

Respectfully Submitted,

Adapt Engineering

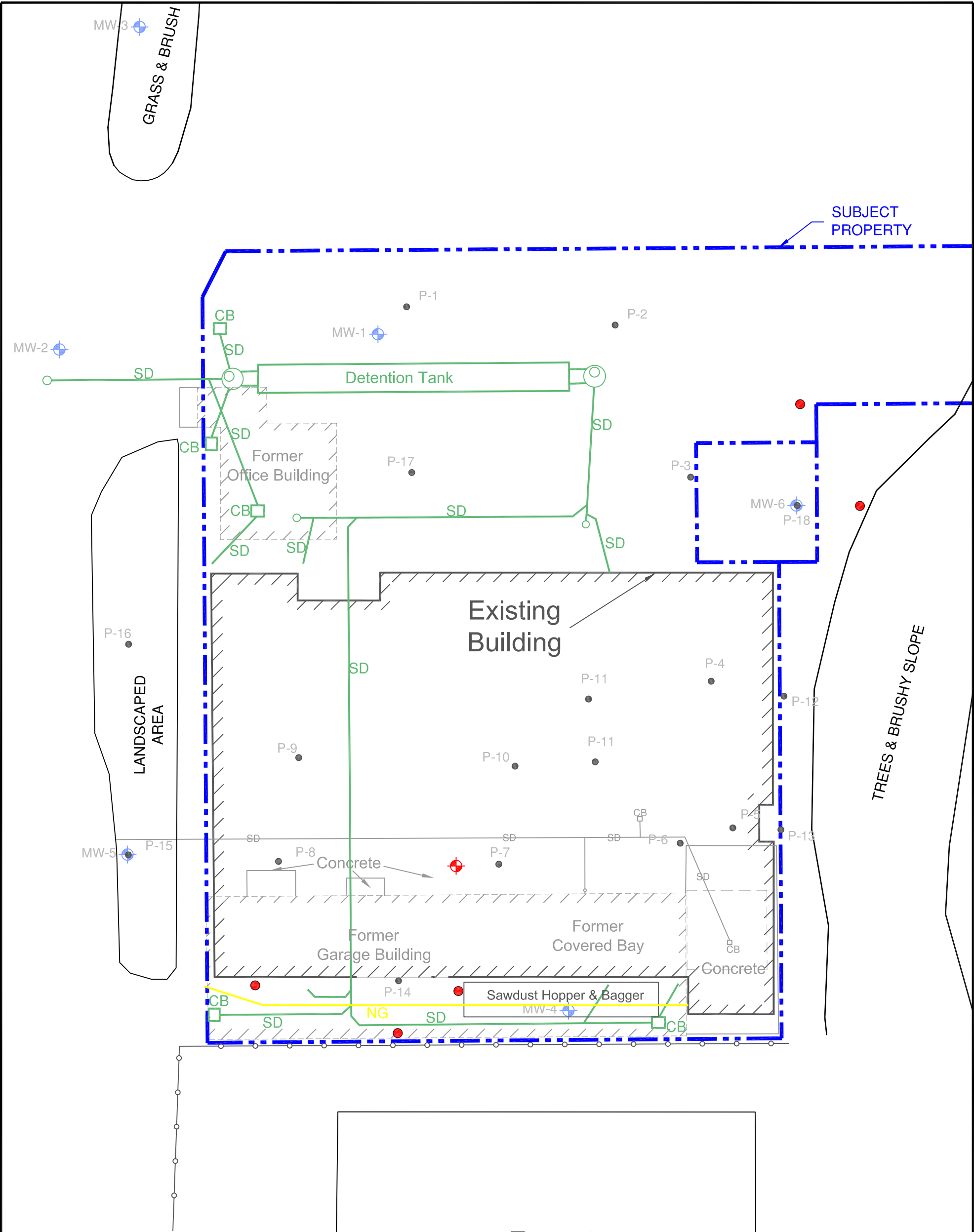


John T. Bhend, L. G.  
Senior Project Manager

JTB/jtb

## **APPENDIX A**

### **FIGURE 1 PROPOSED EXPLORATION PLAN**



**LEGEND:**

- MW-1 - Monitoring Well Number and Approximate Location
- P-14 - Boring Number and Approximate Location
- Proposed Boring Location
- Proposed Monitoring Well Location
- SD - Historic Storm Drain Line
- CB - Historic Catch Basin
- SD - Existing Storm Drain Line
- CB - Existing Catch Basin
- Existing Foundation Pile and Pile Cap (approximate location)
- Existing Foundation Grade Beam (approximate location)



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**FIGURE 1 – Proposed Exploration Plan**

**Project** : Former United Services Site, aka Mooers Bldg Assoc. Property  
**Location** : 3450 16th Avenue West  
Seattle, WA 98001  
**Client** : Mooers Building Associates L.L.C.  
**Project No** : WA15-14908-ENV **Date** : 08/13/15