CLEANUP ACTION PLAN

Mount Baker Properties Site
S. McClellan Street and Martin Luther King Jr. Way S.
Seattle, Washington

PPCD No. 16-2-29584-3 SEA
Facility Site ID #96127971, Cleanup Site ID #13054

Prepared for: Mt. Baker Housing Association

Project No. 160324 • January 6, 2020 • FINAL

Aspect CONSULTING

earth + water

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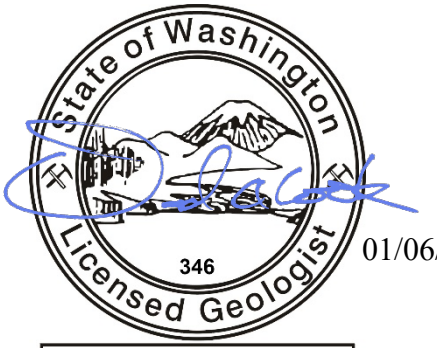

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Executive Summary

This Cleanup Action Plan (CAP), prepared by Aspect Consulting, LLC (Aspect) on behalf of Mt. Baker Housing Association (MBHA), describes the cleanup action selected by the Washington State Department of Ecology (Ecology) for the Mount Baker Properties Site, located along South McClellan Street and Martin Luther King (MLK) Jr. Way South in Seattle, Washington.

The CAP was prepared in compliance with the Model Toxics Control Act (MTCA), the Revised Code of Washington (RCW) 70.105D, the MTCA regulation, Washington Administrative Code (WAC) ch. 173-340, and the requirements of the Prospective Purchaser Consent Decree (PPCD) between Ecology and MBHA (PPCD No. 16-2-29584-3 SEA). The PPCD requires that MBHA complete a cleanup action that meets the requirements of WAC 173-340-360. The PPCD states that the cleanup action shall be "designed to protect human health and the environment from the known release, or threatened release, of hazardous substances or contaminants at, on, or from the Site."

Aspect completed soil explorations, monitoring well installations, and soil, ground, and soil gas sampling at the Site as part of the Remedial Investigation (RI) and pursuant to the PPCD. Based on the results of the RI, cleanup is warranted to remediate the contaminated soil, groundwater, and soil vapor at the Site, and a Feasibility Study (FS) was completed to evaluate potential remedial alternatives for the Site based on proven remedial technologies. The FS included a disproportionate cost analysis to evaluate the ratio of cost to environmental benefit of each of the assembled remedial alternatives. The preferred remedial alternative was selected based on the results of the disproportionate cost analysis and includes the following elements:

- Excavation and permitted disposal of chlorinated solvent-contaminated soil on the Mt. Baker Cleaners parcel to an elevation of 60 feet above mean sea level (amsl)
- Excavation and permitted disposal of chlorinated solvent-contaminated soil on the west-adjacent McClellan parcel to a depth of 15 feet below ground surface (Elevation 57)
- Excavation and permitted disposal of all petroleum hydrocarbon contaminated soil on the Former Phillips 66 parcel
- Continued groundwater sampling to monitor natural attenuation of the groundwater plume post source removal
- Contingency *in situ* chemical reduction (ISCR) implementation in South McClellan Street if the groundwater plume requires additional remediation post source removal

This executive summary should be used only in the context of the full report.

1 Introduction and Background

This Cleanup Action Plan (CAP), prepared by Aspect Consulting, LLC (Aspect) on behalf of Mt. Baker Housing Association (MBHA), describes the cleanup action selected by the Washington State Department of Ecology (Ecology) for the Mount Baker Properties Site, located along South McClellan Street and Martin Luther King (MLK) Jr. Way South in Seattle, Washington.

MBHA is a non-profit affordable housing developer, owner, and operator focused on creating and maintaining affordable housing communities in south Seattle (www.mtbakerhousing.org). MBHA owns the five parcels that comprise the Mount Baker Properties Site, which they are redeveloping for affordable housing. This project will create approximately 150 new transit-oriented affordable housing units near the Mt. Baker Light Rail Station. There will be two developments: Maddux North, located on the four parcels north of South McClellan Street; and Maddux South, located on one parcel south of South McClellan Street.

The five MBHA-owned parcels (King County tax parcels 000360-0030, 000360-0032, 00360-0008, 000360-0031, and 000360-0055) are referred to herein collectively as the "Subject Property" in order to distinguish the two redevelopment properties from the "Site," which is a larger area defined as locations where contaminated soil or groundwater has come to be located.

The contaminated soil and groundwater at the Site have occurred as a result of releases from the former Mt. Baker Cleaners dry cleaner and former Phillips 66 gas station. Herein, the four parcels north of South McClellan Street (aka Maddux North - where the former Mt. Baker Cleaners operated) are referred to as the McClellan parcels, and the parcel to the south of South McClellan Street (aka Maddux South) is referred to as the Former Phillips 66 parcel. The specific parcel where Mt. Baker Cleaners operated (parcel 000360-0031) is herein referred to as the Mt. Baker Cleaners parcel.

The Site is shown relative to surrounding physical features on Figure 1, Site Location. The Site and Subject Property are shown on Figure 2, Site Plan. Figure 2 includes the approximate areal extents of the Model Toxics Control Act (MTCA) Site boundary, which are primarily driven by the groundwater plume (primarily a solvent plume with a smaller commingled gasoline plume).

A Remedial Investigation (RI) and Feasibility Study (FS) was completed in 2019 for the Site (RI/FS; Aspect, 2019). The RI identified the following activities and associated releases that have contributed to contamination of the Site:

- **The former dry cleaner (Mt. Baker Cleaners) and heating-oil underground storage tank (UST)**, located at 2864 South McClellan Street (parcel 000360-0031), is the source of chlorinated solvent contamination present at the Site. A dry cleaner operated under various owners on this parcel from approximately

1940 to late 2018. Chlorinated solvent contamination originated from the following release(s):

- Historical dry-cleaner operations and use and storage of tetrachloroethene (PCE) in the northern portion and back hallway of the former dry cleaner is likely the primary source area of the PCE release, based on the highest concentrations of PCE in soil and groundwater in this area. Based on our interviews with former property owners, the dry-cleaning operations (including use and storage of PCE) historically occurred on this northern portion of the property since the dry cleaner was established in the 1940s through 2018.
- Surface spill(s) of PCE in the north, central, and south portions of the building. The area in the central and south portions of the former dry-cleaner building have sectioned concrete slabs separated by wood partitions, whereby contaminants could spill and discharge to soil beneath the building. Several soil samples obtained throughout the Mt. Baker Cleaners parcel contain PCE concentrations in soil exceeding the MTCA Method A cleanup level as shallow as 2 feet below ground surface (bgs).
- Long-term release(s) of PCE could have occurred from PCE that allegedly was stored in the heating-oil UST (now decommissioned), located in the northeast corner of the former building (near the location of ADP-18, AMW-21, ADP-42, and ADP-44 as shown in the RI/FS figures [Aspect, 2019]).

- **The former gas station (Phillips 66), and auto repair facility**, located at 2800 MLK Jr. Way South (parcel 000360-0055), is the source of petroleum hydrocarbon contamination present at the Site. From the mid-1950s until the mid-1990s, parcel -0055 operated as a gasoline service station. Following the end of gasoline service station operations, the parcel was used as an automobile detail and service facility from the mid-1990s until 2014, when the property became vacant. There was an additional period of vacancy between 2004 and 2010.

  Petroleum hydrocarbon contamination originated from the following releases:

  - Gasoline- and diesel-range petroleum hydrocarbon and benzene, toluene, ethylbenzene, and xylenes (BTEX) contaminated soil and groundwater attributed to release(s) from former pump islands in the western portion of parcel -0055.
  - Diesel- and heavy oil-range petroleum hydrocarbon contaminated soil attributed to release(s) from the former heating-oil UST located in the southeastern portion of the parcel.

Figures 3 and 4 are cross sections showing lithology and the approximate vertical extents of the chlorinated solvent contamination on the McClellan parcels. Figure 5 is a cross section showing lithology and the approximate vertical extents of petroleum hydrocarbon contamination on the Former Phillips 66 parcel.

More detail regarding the vertical and horizontal characterization of chlorinated solvent and petroleum hydrocarbon contamination for the Site is presented in the RI/FS (Aspect, 2019). Section 7 of the RI/FS presents the conceptual model for the Site, which discusses contaminant releases, contaminant fate and transport, exposure pathways, and potential receptors.

The FS evaluated different remedial technologies for source removal and groundwater quality improvements. This CAP describes the cleanup action selected by Ecology for the Site and provides additional information in accordance with Washington Administrative Code (WAC) 173-340-380(1)(a). As described in Section 10 of the FS report (Aspect, 2019), the selected cleanup action for the Site consists of excavation of solvent-contaminated soil in the chlorinated solvent source area (on the former Mt. Baker Cleaners parcel [see Figure 7]) to Elevation 60 and excavation of petroleum-contaminated soil from the Former Phillips 66 parcel. Limited areas of chlorinated solvent contamination in soil extending below Elevation 60 will be overexcavated, as described in Section 4.2.2. Remaining chlorinated-solvent contaminated soil shallower than 15 feet bgs on the McClellan parcels will also be removed. Contaminated soil will be transported off-site for permitted disposal.

Soil contamination due to groundwater partitioning will remain after excavation on the two western McClellan parcels. Prior to redevelopment of the parcels, a passive soil gas venting system, consisting of slotted piping placed laterally underneath the building extents, will be constructed beneath the slab of the planned buildings. Similarly, chemical vapor barriers will be placed above the passive soil gas venting system and beneath the building slabs to ensure the vapor intrusion pathway is removed.

Following completion of the remedial excavations, a Groundwater Compliance Monitoring Plan (GCMP) will be established, and groundwater will be monitored for natural attenuation. After 5 years of Monitored Natural Attenuation (MNA) of groundwater, *in situ* chemical reduction (ISCR) would be implemented as a contingency to enhance MNA of the groundwater plume and reduce the restoration time frame.

2 Cleanup Standards

MTCA cleanup standards consist of remedial action objectives (RAOs), cleanup levels (CULs) for hazardous substances present at a site, the location where cleanup levels must be met (point of compliance), and other regulatory requirements that apply to a site ("applicable state and federal laws.") The cleanup standards for the Site are outlined below.

2.1 Remedial Action Objectives

RAOs consist of chemical- and media-specific goals for protecting human health and the environment. The RAOs specify the media and contaminants of interest, potential exposure routes and receptors, and proposed cleanup goals. In accordance with MTCA and other applicable regulatory requirements, the objective of the proposed cleanup action at the Site is to eliminate, reduce, or otherwise control to the extent feasible and practicable, risks to human health and the environment posed by hazardous substances in soil, groundwater, and soil gas.

The FS (Aspect, 2019) established the following RAOs for the evaluation of remedial alternatives:

- **RAO 1:** Reduce concentrations of contaminants of concern (COCs) in soil to meet cleanup standards at the standard point of compliance.
- **RAO 2:** Reduce concentrations of COCs in groundwater to meet cleanup standards at the standard point of compliance within a reasonable time frame.
- **RAO 3:** Reduce concentrations of COCs in soil and groundwater to achieve vapor intrusion (VI)-based cleanup standards for protection of indoor air. Apply engineering controls to protect receptors until VI-based cleanup standards are obtained.

RAOs are generally achieved by eliminating the associated exposure pathways. Exposure pathways can be eliminated through contaminant removal or treatment to meet chemical- and media-specific cleanup standards at specified points of compliance, and/or through a variety of engineering controls with associated institutional controls.

2.2 Media and Contaminants of Concern

Based on the data collected prior to and during the RI, the impacted media at the Site are soil, groundwater, and soil gas (Aspect, 2019). Contaminants of concern and their affected media are summarized in Table 1 below.

Table 1. Contaminants of Concern

Media	Contaminants of Concern
Soil	• PCE • TCE • Gasoline-range petroleum hydrocarbons • Diesel-range petroleum hydrocarbons • Oil-range petroleum hydrocarbons • BTEX
Groundwater	• PCE • TCE • DCE • VC • Gasoline-range petroleum hydrocarbons • Diesel-range petroleum hydrocarbons • BEX
Soil Gas	• PCE • TCE • Benzene • Naphthalene

Notes: TCE = trichloroethene DCE = dichloroethane PCE = tetrachloroethene
VC = vinyl chloride BEX = benzene, ethylbenzene, and total xylenes
BTEX = benzene, toluene, ethylbenzene, and total xylenes

Other contaminants of potential concern were either not detected, were detected at concentrations less than their respective MTCA Method A cleanup levels, or are components of the COCs listed above that will be part of the solvents and hydrocarbons remediation (such as arsenic, lead, and benzo(a)pyrene) for soil and groundwater, or the MTCA Method B subslab screening levels for soil gas.

2.3 Cleanup Levels

The MTCA Method A CULs for soil and groundwater have been selected as the CULs for the COCs at the Site. The MTCA Method B screening levels for subslab soil gas were chosen as the CULs for soil gas. These CULs are shown below in Table 2.

Table 2. Site Cleanup Standards

Contaminant of Concern	Cleanup Level and Media		
	Soil (mg/kg)	Groundwater (µg/l)	Soil Gas (µg/m^3)
PCE	0.05	5	321
TCE	0.03	5	12.3
DCE	N/A	16	N/A
VC	N/A	0.2	N/A
Gasoline-range petroleum hydrocarbons	30	800	N/A
Diesel- and heavy-oil range petroleum hydrocarbons	2,000	500	N/A
Benzene	0.03	5	10.7
Toluene	7	1,000	N/A
Ethylbenzene	6	700	N/A
Xylenes, Total	9	1,000	N/A
MTCA Point of Compliance	Throughout the Soil Column to 15 feet bgs	Throughout the Site[(a)]	Throughout the Site

Notes: mg/kg – milligrams per kilogram, ug/L – micrograms per liter, ug/m^3 – micrograms per cubic meter

(a) – From WAC 173-340-720(8)(b): The standard point of compliance shall be established throughout the site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the site.

2.4 Points of Compliance

Under MTCA, the point of compliance is the point or location on a site where the cleanup levels must be attained. In accordance with WAC 173-340-740(6)(d), the standard point of compliance for protection of soil is throughout the soil column. The standard point of compliance for groundwater is throughout the Site. The standard point of compliance for soil gas is throughout the Site. The objective of the cleanup action is to meet the cleanup standards at the standard point of compliance.

3 Applicable State and Federal Laws

The MTCA (Chapter 70.105D RCW) requires that cleanup actions comply with applicable state and federal laws (WAC 173-340-360(2)a(iii)), which include legally applicable requirements, as well as requirements that Ecology determines are relevant and appropriate. The applicable or relevant and appropriate requirements (ARARs) for cleanup actions often include various construction-related permits, air emission requirements, water discharge requirements, off-site disposal requirements, and other issues related to impacts in and around the site. ARARs can be categorized as follows:

- **Chemical-specific ARARs** are laws and requirements that establish health- or risk-based numerical values or methodologies for developing such values. These ARARs are used to establish the acceptable concentration of a chemical that may remain in or be discharged to the environment. As such, chemical-specific ARARs are considered in developing cleanup standards.
- **Action-specific ARARs** are performance, design, or other requirements that may place controls or restrictions on a particular remedial action.
- **Location-specific ARARs** are requirements that are triggered based on the location of the remedial action to be undertaken.

The following ARARs for the Site are identified:

- The **State Environmental Policy Act** (SEPA)(Chapter 197-11 WAC) and the SEPA procedures (Chapter 173-802 WAC) ensure that state and local government officials consider environmental values when making decisions. The SEPA process begins when an application for determination is submitted to an agency, or an agency proposes to take some official action, such as implementing a MTCA Cleanup Action Plan. A SEPA determination by Ecology would be required prior to initiating remedial construction activities.
- The **Washington Dangerous Waste Regulations** (Chapter 173-303 WAC) would apply if dangerous wastes are generated, and United States Department of Transportation and Washington State Department of Transportation regulations regarding transport of hazardous materials (49 Code of Federal Regulations [CFR] Parts 171-180) would apply if regulated material is transported off-site as part of the cleanup action.
- If construction-generated dewatering water or stormwater from the cleanup action is discharged to surface waters of the State of Washington, such discharge would need to comply with requirements of a **National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit (CSGP)**. Infiltration of stormwater is not subject to the CSGP, but there are no plans to infiltrate stormwater at this Site. Ecology administers the federal NPDES program in Washington State. Operators of regulated construction sites discharging to surface waters of the state are required to:
    - Submit a Notice of Intent and obtain coverage under the CSGP

  - Develop a stormwater pollution prevention plan (SWPPP)
  - Implement sediment, erosion, and pollution prevention control measures, including water quality treatment, as needed, to comply with the SWPPP

  The permit also requires that site inspections be conducted by a Certified Erosion and Sediment Control Lead.

  There are no plans to discharge stormwater directly to a surface water body. It is possible that stormwater may be collected, tested, and treated (if warranted), prior to discharge to a nearby sanitary sewer system. The applicable authorities for permitting such discharges are City of Seattle and King County, who maintain the piping and treatment facilities, respectively.

- **Occupational Safety and Health Administration** and Washington Industrial Safety and Health Act regulations (29 CFR 1910.120; Chapter 296-62 WAC) governing worker safety during cleanup action execution.
- **Washington State Water Well Construction Regulations** (Chapter 173-160 WAC) regulating groundwater well installation and decommissioning as part of the cleanup action.
- **The Archeological and Historical Preservation Act** (16 USCA 496a-1) would be applicable if any subject materials are discovered during grading and excavation activities. Interactions have already occurred with Department of Archaeology and Historic Preservation (DAHP) related to this Site. In a July 30, 2018, letter to MBHA, DAHP indicated the following: "We concur with a Determination of No Cultural Resource impacts with the stipulation for an Unanticipated Discovery Plan." An Unanticipated Discovery Plan will be part of the final CAP.

Additional ARARs that may be relevant to a remedial action include:

- General Occupational Health Standards (Chapter 296-62 WAC)
- Safety Standards for Construction Work (Chapter 296-155 WAC)
- Underground Injection Control Program (Chapter 173-218 WAC)
- Permits from local municipalities as required for activities at the Site. Examples include King County and City of Seattle permits for sewer discharges, and City of Seattle grading permits, street-use permits, or shoreline permits.

Many ARARs are commonly addressed through standard industry practices. For instance, construction of monitoring or remediation wells will be conducted by a Washington State-licensed driller, and construction work is conducted under site-specific health and safety plans in compliance with applicable safety regulations.

4 Selected Cleanup Action

The cleanup action was developed through a framework of evaluating the areas targeted for remediation, the available remedial technologies to treat those areas, and the cost to benefit ratio for each of those remedial technologies.

4.1 Areas Targeted for Remediation

The nature and extent of contamination at the Site is outlined in the Conceptual Site Model section of the RI/FS (Aspect, 2019). For the purposes of this CAP, three areas have been defined for remedial action evaluation based on the results of the RI/FS (Figure 6). These areas and their drivers for cleanup are as follows:

- **Chlorinated Solvent Source Area**: Soil and groundwater in the chlorinated solvent source area are impacted by PCE released from operations at the Mt. Baker Cleaners. The high concentrations of PCE observed in soil beneath the Mt. Baker Cleaners parcel leach to groundwater, creating the groundwater plume that has migrated southward, and volatilize, creating a pathway for potential vapor intrusion. Based on the results of groundwater sampling conducted at AMW-21 (located beneath the north portion of the former Mt. Baker Cleaners building), free-phase PCE is expected to be present in the chlorinated solvent source area in the north end of the Mt. Baker Cleaners parcel. Soil contaminated with PCE above the CULs across all parcels will be removed to a minimum of 15 feet bgs.

  Towards the southwest end of the McClellan parcels (i.e., near AMW-10), PCE concentrations in saturated soil are in soil-groundwater equilibrium with the dissolved-phase PCE concentrations. Compliance of CULs in PCE-contaminated soil that is in soil-groundwater equilibrium will be empirically demonstrated through groundwater compliance monitoring.

- **Petroleum Hydrocarbon Source Area**: The petroleum hydrocarbon source area includes two distinct areas of contamination on the Former Phillips 66 parcel:

  1. Gasoline-range hydrocarbons in soil and groundwater near the former pump islands in the western portion of the parcel
  2. Oil- and diesel-range hydrocarbons in soil near the heating-oil UST located in the southeastern portion of the parcel

  The high concentrations of petroleum observed in soil beneath the Former Phillips 66 parcel and surrounding MLK Jr. Way South right-of-way (ROW) leach to groundwater, creating the groundwater plume (the gasoline contamination also volatilizes, creating a pathway for potential vapor intrusion). Based on partitioning calculations (with the exception of the shallow PCE-contaminated soil located in the southeast corner of the parcel where a surface spill likely occurred), chlorinated solvents detected in the petroleum hydrocarbon source area (in soil that is saturated) are in soil-groundwater equilibrium with the dissolved-phase PCE concentrations and are attributed to the Mt. Baker Dry Cleaners release. Compliance of CULs in PCE-contaminated soil that is in soil-

groundwater equilibrium will be empirically demonstrated through groundwater compliance monitoring.

- **Chlorinated Solvent and Petroleum Hydrocarbon Groundwater Plume**: The areal extent of the chlorinated solvent groundwater plume originates at the chlorinated solvent source area and extends southwest through the South McClellan Street ROW, underneath the Former Phillips 66 parcel, and into the MLK Jr. Way South ROW (Figure 6).

  The extent of the groundwater plume is primarily driven by PCE in the chlorinated solvent source area. The extent of the entire contaminated groundwater plume includes the dissolved-phase gasoline- and diesel-range petroleum hydrocarbons, benzene, toluene, and ethylbenzene emanating from the petroleum hydrocarbon source area. Within and downgradient of the petroleum hydrocarbon portion of the plume, solvents have degraded through reductive dichlorination to vinyl chloride (VC). Therefore, the signature of the co-mingled chlorinated solvent- and petroleum hydrocarbon-contaminated groundwater plume is represented by: (a) PCE, located north, and upgradient of, the central part of the Former Phillips 66 parcel; and (b) VC, located south/southwest, and downgradient of the central part of the Former Phillips 66 parcel.

4.2 Description of Selected Cleanup Action

The selected cleanup action for the Site includes the following components (Figure 7):

4.2.1 Remediation Preparation

- Removal of remaining buildings and building foundations on both the McClellan and Former Phillips 66 parcels.
- Decommissioning of monitoring wells within the redevelopment footprints (Figure 7).
- Shoring installation at the McClellan and Former Phillips 66 parcels to facilitate contaminated soil excavation (Figure 7).
- Dewatering will be necessary to perform the remedial excavation for the chlorinated solvent source area and petroleum hydrocarbon source area. Groundwater in the area of the chlorinated solvent source area contains the highest concentrations of PCE and trichloroethene (TCE). Groundwater generated from dewatering will be treated prior to permitted discharge. The treatment methodology will be established in the engineering report and will meet all local, state, and federal requirements.

4.2.2 Remedial Excavations

- Removal of an estimated 8,250 tons[1] of chlorinated solvent-contaminated soil to an elevation of 60 feet above mean sea level (amsl) on the former Mt. Baker

[1] The estimated volume of chlorinated solvent-contaminated soil is greater than that estimated in the RI/FS (Aspect, 2019) due to changes in construction design and permitting. The final design and estimated volume will be presented in the Engineering Design Report.

Cleaners parcel (Figures 3, 4, and 7). This elevation is below the contact of the recessional deposits and the Pre-Fraser aquitard.

- Removal of chlorinated-solvent contaminated soil to 15 feet bgs (Elevation 57) on the remaining McClellan parcels (Figure 7). This depth will eliminate the direct-contact pathway.
- Overexcavation of chlorinated solvent-contaminated soil below elevation 60 feet amsl at boring locations ADP-49, ADP-51, ADP-56, AB-41, and AMW-21 (Figure 7):
    - ADP-49 and ADP-51 will be overexcavated in an approximately 13-foot by 10-foot area to an elevation of 55 feet amsl.
    - ADP-56 will be overexcavated in an approximately 10-foot by 10-foot area to an elevation of 57 feet amsl.
    - AB-41 will be overexcavated in an approximately 15-foot by 10-foot area to an elevation of 56 feet amsl.
    - AMW-21 will be overexcavated to an approximate elevation of 55 feet amsl. However, PCE was detected above the MTCA Method A cleanup level at Elevation 48 in one soil sample obtained at this location. The concentration at Elevation 48 is anomalous; compliance with MTCA will be established by performing confirmation sampling in accordance with WAC 340-740 (7)e(ii), and the soil will be left in place.
- Confirmation soil sampling in the chlorinated solvent source area to ensure the removal of soil containing chlorinated solvents at concentrations exceeding the cleanup standards, to the extent practical.
- Removal of the gasoline-range petroleum hydrocarbon source area to a depth of approximately 20 feet (elevation 43 feet amsl) on the western side of the Former Phillips 66 parcel (Figures 5 and 7). The cleanup action will include removal of all soil above cleanup standards in the petroleum hydrocarbon source area, to the extent practical. This is estimated to remove approximately 3,725[2] tons of petroleum-contaminated soil.
- Removal of the oil-range petroleum hydrocarbon source area contaminated soil to a depth of approximately 15 feet (elevation 46 feet amsl) in the southeastern portion of the Former Phillips 66 parcel (Figure 7). The cleanup action will include removal of all soil above cleanup standards in the petroleum hydrocarbon source area, to the extent practical. This is expected to remove approximately 940 tons[2] of petroleum-contaminated soil.

[2] The estimated volume of petroleum hydrocarbon-contaminated soil is greater than that estimated in the RI/FS (Aspect, 2019) due to changes in construction design and permitting. The final design and estimated volume will be presented in the Engineering Design Report.

4.2.3 Vapor Mitigation System

- Installation of passive soil gas venting systems and a chemical vapor barrier beneath the future redevelopments on both the McClellan and Former Phillips 66 parcels (Figure 8). The vapor mitigation system will be installed to ensure no vapor intrusion related to contaminated groundwater impacts the future developments. The vapor mitigation system is not considered a primary cleanup option.

4.2.4 Post-Remedial Excavation Monitoring and Contingencies

- Collect subslab and/or indoor air confirmation sampling after construction of the new buildings on both parcels is completed. If confirmation sampling indicates a potential vapor intrusion risk, the need to convert the passive soil gas venting system to an active subslab depressurization system will be assessed.

- Install replacement monitoring wells on the McClellan and Former Phillips 66 parcels. The proposed MNA monitoring well network includes five new wells and the existing Site wells (Figure 9). All well locations could be adjusted based on the final layout of the redevelopment buildings at the Subject Property.

- Prepare a Groundwater Compliance Monitoring Plan (GCMP) for the MNA program that presents the final locations of monitoring wells, monitoring frequency, location-specific monitoring analytes, analytical methods, and data evaluation and reporting protocols. The GCMP would be revised as needed to describe any contingency actions to be implemented (see below).

- Oversee MNA of groundwater until cleanup standards are achieved. The MNA monitoring will be begin with a period of 5 years post-remedial excavation.

- Update the estimate of MNA restoration time frame during the Ecology 5-year review process. Ecology will use the 5-year review process to evaluate if the updated MNA restoration time frame is reasonable and if any contingency actions are warranted.

- ISCR was determined to be the most appropriate technology to be implemented as a contingency action. Based on current groundwater concentrations, it is assumed that ISCR would be implemented through a series of injection transects oriented perpendicular to groundwater flow and designed to reduce the overall restoration time frame (Figure 7). The contingency action will be triggered based on the following:

    1. If a 25 percent or less reduction in groundwater concentrations is observed after 5 years of MNA monitoring and evaluation, MBHA will prepare a work plan to implement the ISCR contingency action, including a schedule for implementation. Upon Ecology's approval of the work plan, MBHA will implement the work plan according to the schedule.

    2. If groundwater concentrations have reduced between 25 and 50 percent after 5 years of MNA monitoring and evaluation, MBHA will consult with Ecology to determine if implementation of the ISCR contingency action is

needed. If Ecology determines implementation of the ISCR contingency action is needed, MBHA will prepare a work plan to implement the ISCR contingency action, including a schedule for implementation. Upon Ecology's approval of the work plan, MBHA will implement the work plan according to the schedule.

3. If groundwater concentrations have reduced by 50 percent or greater after 5 years of MNA monitoring and evaluation, then MBHA will continue MNA monitoring and re-evaluate the need for a contingency action after 5 years.

- Final Cleanup Action 5-year reviews by Ecology as outlined in the MTCA under WAC 173-340-420(2).
- Provide for institutional controls, which will include recording environmental covenants on properties owned by MBHA within the Site and making good faith efforts to obtain environmental covenants for any properties within the Site not owned by MBHA. The covenants should include restrictions to prevent groundwater use during the MNA period.

4.3 Other Remedial Technologies Evaluated

The RI/FS (Aspect, 2019) evaluated potentially applicable remedial technologies prior to developing cleanup alternatives for the chlorinated solvent source area, petroleum hydrocarbon source area, and the groundwater plume. The following remedial technologies were evaluated but not retained as elements of the selected cleanup action because these techniques were deemed to not meet RAOs.

- **Monitoring only** does not meet the requirements of MTCA.
- ***In situ* permeable reactive barriers** could not feasibly be installed in the South McClellan Street or MLK Jr. Way South roadways or their ROWs.
- **Enhanced Anaerobic Bioremediation** would produce additional dichloroethene (DCE) isomers and VC through reductive dechlorination, thereby creating exceedances of additional COCs in portions of the groundwater plume where degradation products are currently absent.
- **Soil Vapor Extraction (SVE)** would be constrained by mass transfer from the vadose zone and would not achieve cleanup standards in a reasonable time frame.
- **Air Sparge (AS) Curtain** would potentially include the installation of AS points, SVE points, and the associated infrastructure into South McClellan Street, MLK Jr. Way South, and their ROWs, including the need for aboveground equipment that would be incompatible with the public land use.
- ***In Situ* Chemical Oxidation** is most effective at treating higher concentrations in a well-defined area, so would not be readily implementable for addressing the broad areal footprint of the groundwater plume.
- **Dual Phase Extraction** would be less cost-effective than AS/SVE based on the anticipated amount of groundwater that would need to be extracted and treated.

- ***In Situ* Thermal Treatment** would take a long time to permit and implement, and it is disruptive to the future use of the Subject Property. The disproportionate cost analysis in the RI/FS also indicated it would provide a lower benefit to cost ratio than the selected cleanup action.

4.4 Rationale for the Selected Cleanup Action

The primary source of contaminants at the Site requiring remedial action is the large mass of chlorinated solvent-contaminated soil in the chlorinated solvent source area and petroleum hydrocarbon-contaminated soil in the petroleum hydrocarbon source area, both of which continuously leach to groundwater (Aspect, 2019). The continuous leaching of Site contaminants to groundwater creates the subsequent groundwater plume. The excavation of contaminated soils (including potential free-phase PCE in the chlorinated solvent source area) is expected to dramatically improve groundwater quality throughout the South McClellan Street and MLK Jr. Way South ROWs. Given the location of the chlorinated solvent source area and petroleum hydrocarbon source area, and Site-specific constraints (i.e., there will be no direct access to source areas [if they had remained] once redevelopment has been completed), the selected cleanup action, which focuses on excavation and off-Site disposal, represents the most permanent and effective approach of contaminant source removal in accordance with MTCA.

Given the areal extents of the groundwater plume, active remediation measures which require continuous, prolonged treatment are not compatible with the public land use of South McClellan Street, MLK Jr. Way South, and their ROWs based on cost, complexity, and operation of remediation infrastructure in these areas. However, targeted and discrete injection events using ISCR could be implemented within ROWs through temporary closures and street use permitting.

Excavation of contaminated soils is expected to dramatically improve groundwater quality throughout the Site, particularly immediately downgradient of the chlorinated solvent source area. For this reason, MNA is the most appropriate technology for the groundwater plume post source removal. However, as discussed in Section 4.2.4, additional contingency ISCR for groundwater would be considered in the event that monitoring results indicate that MNA is not capable of achieving CULs.

Post-remedial excavation MNA monitoring and evaluation will be used to determine if it will be necessary to trigger contingency remediation of the groundwater plume, via ISCR, and follow-on performance groundwater monitoring. During the first 5-year post-remedial excavation review period, the restoration time frame estimate will be updated. If the estimate is deemed unreasonably long, (i.e., more than 30 years), the process for triggering the ISCR contingency action outlined in Section 4.2.4 will be implemented.

4.5 Compliance with WAC 173-340-360

4.5.1 MTCA Threshold Requirements and Selection Criteria

As documented in Section 11.2 of the RI/FS (Aspect, 2019), the cleanup action selected by Ecology for the Site meets the threshold requirements and satisfies selection criteria of WAC 173-340-360:

MTCA Threshold Requirements

- Protects human health and the environment
- Complies with cleanup standards
- Complies with applicable state and federal laws
- Provides for compliance monitoring

MTCA Selection Criteria

- Uses permanent solutions to the maximum extent practicable
- Provides for a reasonable restoration time frame
- Considers public concerns

4.5.2 Restoration Time Frame

As documented in Section 11.3.8 of the RI/FS (Aspect, 2019), the cleanup action selected by Ecology for the Site provides for a reasonable restoration time frame as required by WAC 173-340-360(4). The cleanup action addresses the removal of the source area soil on both the McClellan and Phillips 66 parcels, and therefore, the overall restoration time frame will be driven by achieving the cleanup levels in groundwater in the ROWs and outside the source remediation areas.

Due to the complexity of the geology, hydrogeology, and contaminant concentrations of the comingled solvent and hydrocarbon plumes, the data show that the solvent plume is bifurcated geochemically by the petroleum hydrocarbons present in soil and groundwater in the petroleum hydrocarbons source area. Upgradient of the petroleum hydrocarbons (to the north/northeast), the groundwater plume is predominantly PCE with significantly lower concentrations of TCE and cis-1,2 DCE observed; while downgradient (south and southwest) of the petroleum hydrocarbons, VC concentrations define the extent of the groundwater plume. The presence of the petroleum hydrocarbons in soil and groundwater have created anaerobic, reducing geochemical conditions necessary for reductive dechlorination of the PCE in groundwater. This is explained by the presence of VC downgradient of the hydrocarbons but not upgradient (or closer to the former dry cleaner source where PCE is present).

The dissolved-phase solvent plume will drive the overall restoration time frame, and it is appropriate, and necessary, to break the groundwater plume into two different restoration time frames:

1. **Longer Time Frame** – South McClellan Street ROW (the PCE/TCE/DCE that will remain in South McClellan Street after source removal at the former dry cleaner). Based on current groundwater concentrations (three orders magnitude greater than the CUL) in the South McClellan Street ROW, achieving the CUL of 5 ug/L in the ROW will drive the overall restoration time frame for the Site.

2. **Shorter Time Frames:**

    a. **The VC area downgradient of the Former Phillips 66 parcel.** The downgradient extent of the groundwater plume south and southwest of the Former Phillips 66 parcel is degraded to primarily VC at concentrations within one order of magnitude of the CUL. As a result, this portion of the solvent-contaminated groundwater plume is expected to naturally attenuate through aerobic biodegradation and volatilization to the CUL sooner than the PCE in the South McClellan Street ROW.

    b. **The petroleum hydrocarbons in groundwater** contained within the larger solvent plume is limited in extent due to lower mobility in groundwater (relative to chlorinated solvents). The petroleum hydrocarbons in groundwater are expected to reach CULs much sooner than the PCE in South McClellan Street ROW under natural attenuation.

Based on a groundwater flushing model, the estimated restoration time frame for the groundwater plume in the South McClellan Street ROW is 51 years[3]. After 5 years of MNA monitoring and evaluation, the restoration time frame estimate will be revised and the ISCR contingency action implemented according to triggers in Section 4.2.4. The preliminary ISCR design shortens the groundwater travel time to one quarter of MNA alone and reduces the restoration time frame. The modeled restoration time frame would be 15 years after ISCR implementation. A full discussion of the model is included in Section 11.3.8 and Appendix G of the RI/FS (Aspect, 2019).

4.5.3 Public Participation

The draft CAP has been presented for public comment. As part of the public participation process, public notices and fact sheets were distributed by Ecology, and hard copies of the report were made available at locations specified by Ecology in the fact sheet.

[3] This estimate is developed from a simplistic model used for the purpose of estimating restoration time frames of each alternative in the FS by applying the same hydraulic and chemical parameter assumptions for a relative comparison. There is significant uncertainty in predicting the rate of groundwater restoration following source removal, hence the importance of a robust groundwater monitoring program.

5 Cleanup Implementation Schedule

Cleanup is anticipated to proceed according to the following schedule:

- **January 2020** – Complete engineering for shoring remedial excavation design and contracting. Obtain a Contained-In Determination for PCE-contaminated soil on the McClellan parcels.
- **February 2020** – Complete the shoring installation on the McClellan parcels and begin the remedial excavation on the McClellan parcels. Once shoring is completed on the McClellan parcels, move to the Former Phillips 66 parcel and complete shoring installation on the Former Phillips 66 parcel.
- **April 2020** – Complete the remedial excavation on the both the McClellan and the Former Phillips 66 parcels.
- **May 2020** – Complete excavation backfill on both the McClellan and Former Phillips 66 parcels.
- **June 2020** – Install passive soil gas venting and chemical vapor barriers beneath the planned redevelopments on both parcels.
- **Mid to Late 2021** (following completion of redevelopment construction) – Complete installation of the monitoring well network and begin groundwater MNA compliance monitoring. Formalize the GCMP.
- **2026** – During the first 5-year Ecology Review, MNA evaluation will be used to determine the restoration time frame and the need for implementation of the ISCR contingency action according to rationale outlined in Section 4.2.4.

Groundwater MNA compliance monitoring will continue until groundwater cleanup standards are achieved throughout the Site.

6 References

Aspect Consulting, LLC, 2019, Mount Baker Properties Site Remedial Investigation and Feasibility Study, Prepared for Mt. Baker Housing Association, Final, December 31, 2019.

Washington State Legislature, 2009, Washington Administrative Code (WAC), April 1, 2009.

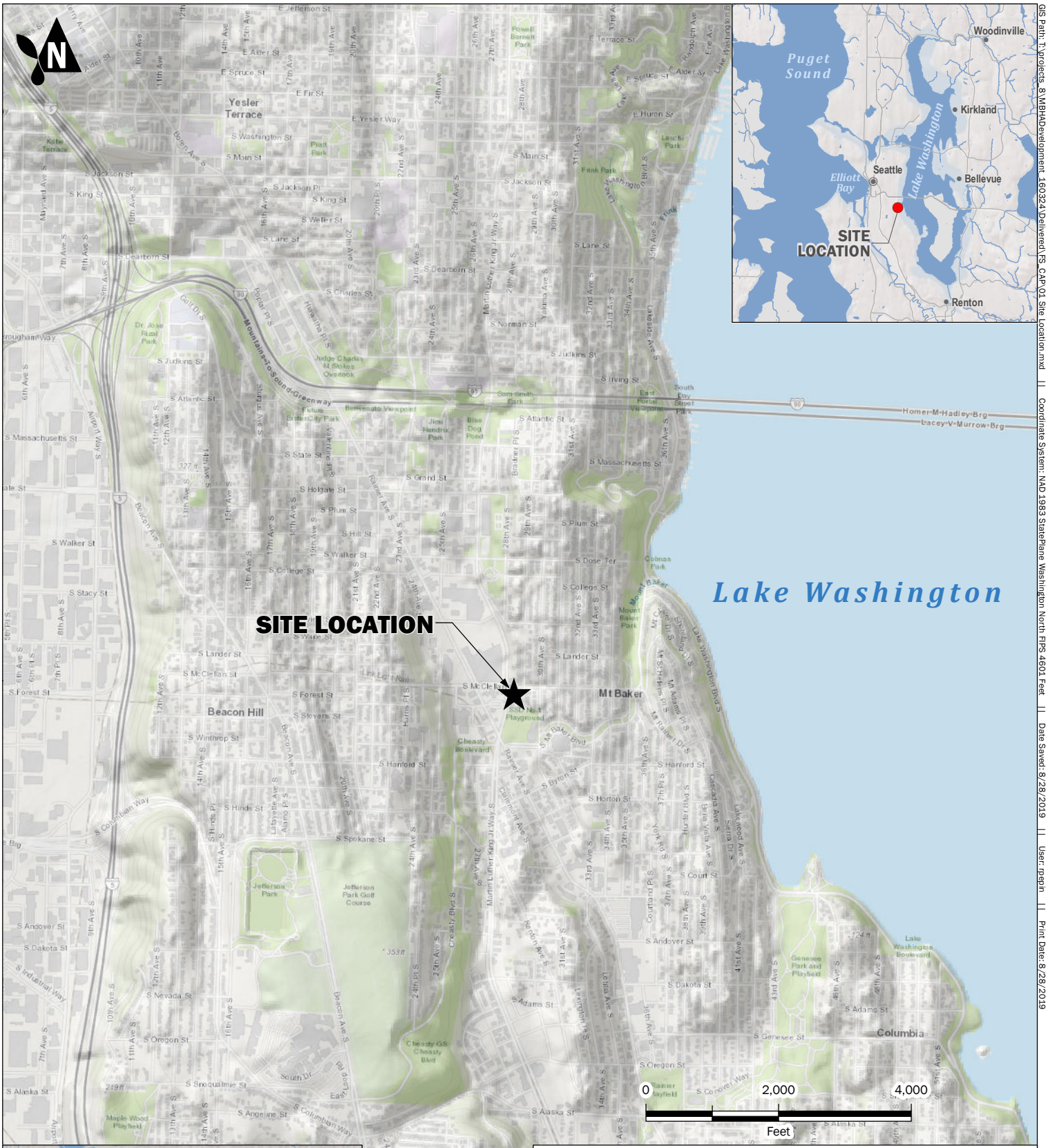
7 Limitations

Work for this project was performed for Mt. Baker Housing Association (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.

Please refer to Appendix A titled "Report Limitations and Guidelines for Use" for additional information governing the use of this report.

FIGURES



Site Location

Cleanup Action Plan
Mount Baker Properties Site
Seattle, Washington

Aspect CONSULTING	AUG-2019	BY: JAS / EAC	FIGURE NO. 1
	PROJECT NO. 160324	REVISED BY: KB / RAP	

GIS Path: T:\projects_8\MBHADevelopment\160324\Delivered\FS_CAP\01 Site Location.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 8/28/2019 || User: rpegin || Print Date: 8/28/2019

Basemap Layer Credits || Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
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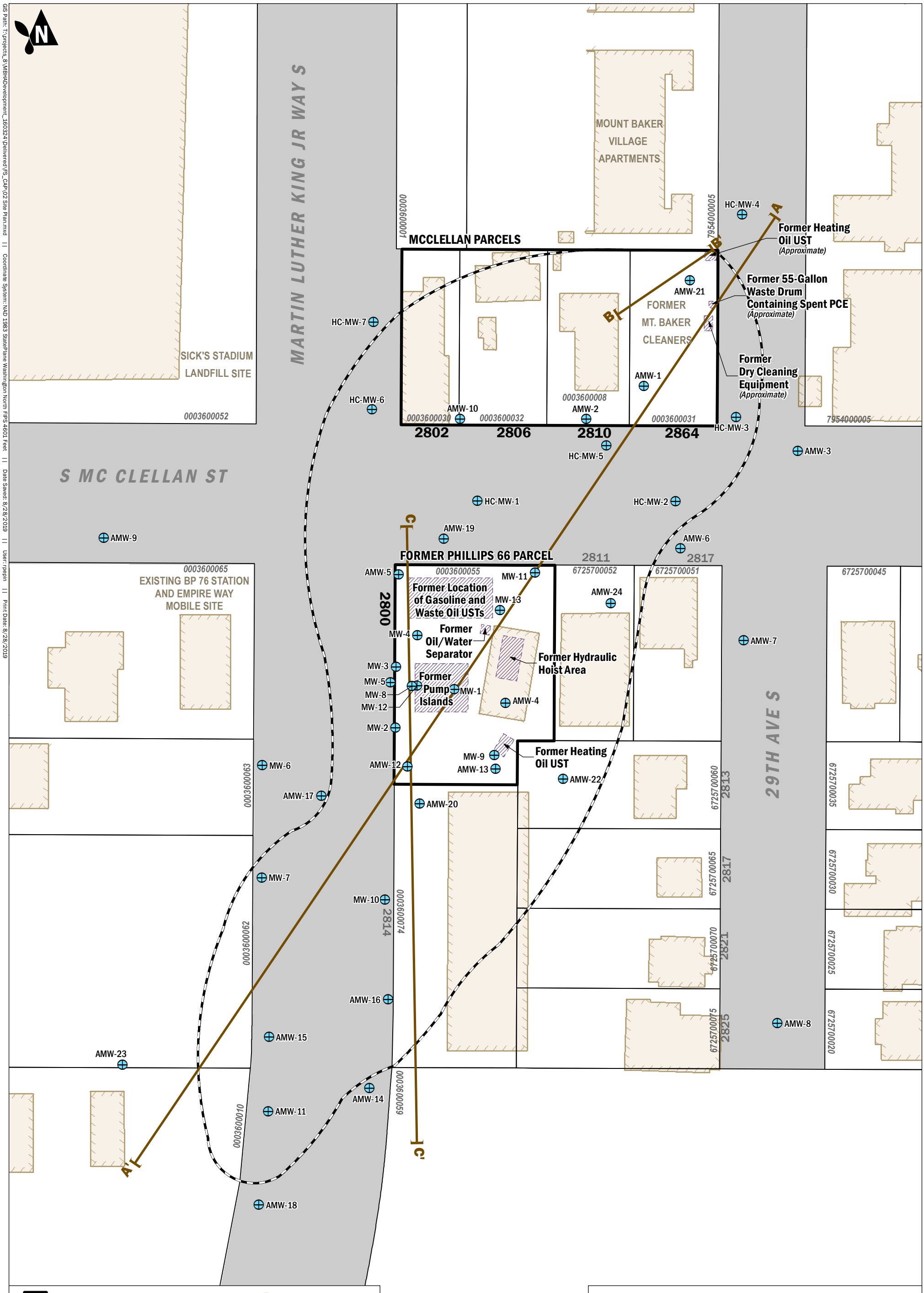


Note: McClellan Parcels indicate the planned Maddux North Development; Former Phillips 66 indicate the planned Maddux South Development. Tax parcel data from King County was minorly adjusted based on site knowledge.

Site Plan

Cleanup Action Plan
Mount Baker Properties Site
Seattle, Washington

Aspect Consulting	AUG-2019	BY: RAP / AY	FIGURE NO. 2
	PROJECT NO. 160324	REVISED BY: ---	

GIS Path: T:\projects_8\MBHADevelopment_160324\Delivered\FS_CAP\02 Site Plan.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 8/28/2019 || User: rpepin || Print Date: 8/28/2019

Cross Section A-A'
Chlorinated Solvent and Petroleum Hydrocarbon Source Areas

Cleanup Action Plan
Mount Baker Properties Site
Seattle, Washington

Aspect Consulting	Aug-2019	BY: JAS/SCC	FIGURE NO. 3
	PROJECT NO. 160324	REVISED BY: SCC	

B (SW)

B' (NE)

Boiler Room

Back Hallway

Mount Baker Cleaners Ground Floor

Property Boundary

ADP-54 (Offset 0')
ADP-47 (Offset 4' NW)
ADP-51 (Offset 1' SE)
ADP-46 (Offset 9' NW)
ADP-49 (Offset 2' NW)
AB-40 (Offset 1' NW)
ADP-42 (Offset 0')
ADP-18 (Offset 1' NW)
ADP-44 (Offset 2' SE)
AMW-21 (Offset 7' SE)
ADP-55 (Offset 2' NW)
AB-4 (Offset 3' NW)
ADP-34 (Offset 0')

UST

Fill

Glacial Recessional Deposits

Pre-Fraser Deposits

Elevation in Feet

Distance in Feet

*Soil compliance will be determined with confirmation soil sampling.

Analytical Results

- Contaminants of concern detected at concentrations greater than the MTCA Method A cleanup levels.
- Contaminants of concern detected at concentrations less than the MTCA Method A cleanup levels.
- Contaminants of concern not detected.
- PCE TCLP testing not necessary based on the concentration of PCE detected.

ADP-47 (Offset 4' NW) — Boring Identification; Offset Distance and Direction

PCE, (mg/kg) 13 — Analytical Sample Location — 390 PCE, TCLP (µg/L)

- Estimated Geologic Contact
- Fill Soil
- Glacial Recessional Deposits *(Loose to Medium Dense Sand and Silt with Some Organic Material)*
- Pre-Fraser Deposits *(Dense to Very Dense Silt and Clay)*
- Area of PCE Dangerous Waste
- Approximate Extents of Chlorinated Solvent Source Area Remedial Excavation
- Remedial Excavation Potholing Below Elevation 60 Feet (AMSL)

Note: Actual extents of remedial over-excavation will be determined by confirmation soil sampling.

Horizontal Scale: 1" = 5'
Vertical Scale: 1" = 5'
No Vertical Exaggeration

0 5 10 Feet

Cross Section B-B'
Chlorinated Solvent Source Area

Cleanup Action Plan
Mount Baker Properties Site
Seattle, Washington

Aspect Consulting

Aug-2019	BY: KB/SCC	FIGURE NO. 4
PROJECT NO. 160324	REVISED BY: SCC	

C North

C' South

Intersection with Cross Section A-A'

2800 MLK Jr. Way South
(Former Phillips 66 parcel)

Shoring to be Installed
along MLK Jr. Way South

Approximate Extents of Western
Petroleum Hydrocarbon Source
Area Remedial Excavation

AMW-19 (Offset 21' E)
AMW-05 (Offset 5' W)
MW-04 (Offset 5' E)
MW-03 (Offset 7' W)
MW-12 (Offset 4' E)
MW-08 (Offset 2' E)
MW-02 (Offset 8' W)
AMW-12 (Offset 2' W)
AMW-20 (Offset 5' E)
MW-10 (Offset 16' W)
AMW-16 (Offset 15' W)
AMW-14 (Offset 26' W)

7/31/18
8/7/17
6/22/06
8/9/05
5/19/14
7/12/11
8/9/05
11/21/17
7/30/18
7/13/11
7/30/18
11/21/17

Fill

Glacial
Recessional
Deposits

Pre-Fraser
Deposits

Elevation in Feet

90
80
70
60
50
40
30
20

0 25 50 75 100 125 150 175 200 225 250 275 300 325 350

Distance in Feet

Legend

- Estimated Geologic Contact
- Fill Soil
- Glacial Recessional Deposits
  (Loose to Medium Dense Sand and Silt with Some Organic Material)
- Pre-Fraser Deposits
  (Dense to Very Dense Silt and Clay)
- Approximate Extents of Remedial Excavation

K-SB-2 (Offset 17' NW)

- Offset Distance and Direction from Profile
- Boring Identification
- Analytical Sample Location
- Petroleum Compounds (Upper Half)
- PCE (Lower Half)
- 7/31/18 — Water Level and Date Measured
- Screened Interval

Analytical Results

- One or more of contaminants of concern detected at a concentration greater than the MTCA Method A cleanup level.
- One or more of contaminants of concern detected at a concentration less than the MTCA Method A cleanup level.
- Contaminants of concern not detected.
- Contaminant not analyzed.

Horizontal Scale: 1" = 25'
Vertical Scale: 1" = 10'
Vertical Exaggeration 2.5x

0 25 50 Feet

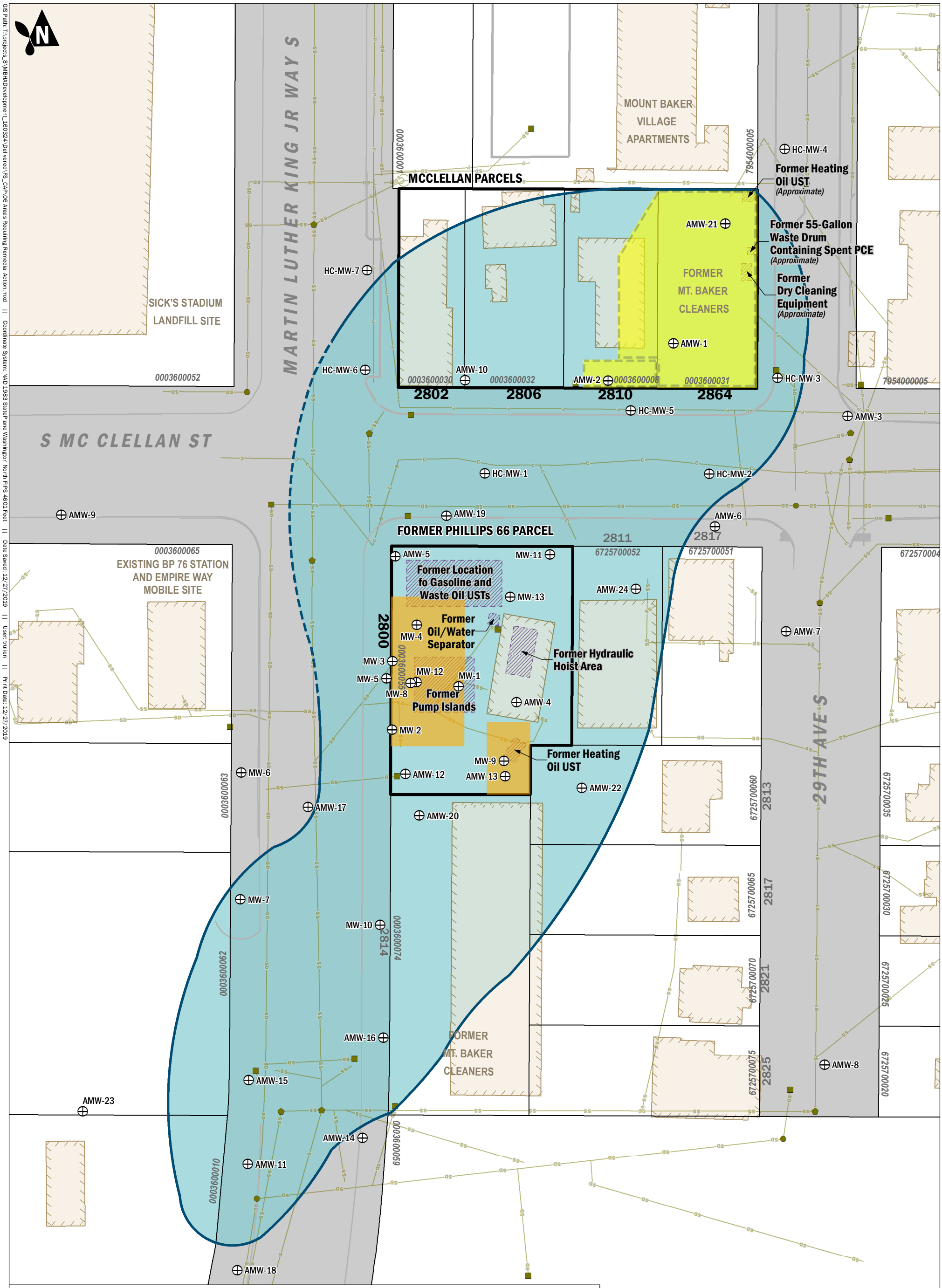
Note: Petroleum compounds include diesel and gasoline range petroleum hydrocarbons, benzene and total xylenes.

Cross Section C-C'
Petroleum Hydrocarbon Source Area

Cleanup Action Plan
Mount Baker Properties Site
Seattle, Washington

Aspect Consulting	Aug-2019	BY: JAS/SCC	FIGURE NO. 5
	PROJECT NO. 160324	REVISED BY: SCC	

CAD Path: Q:\MBHA Development\160324 Development\2019-08 Draft CAP\160324-CC (CAP)(EE RIFS).dwg 11x17 Landscape || Date Saved: Aug 27, 2019 10:51am || User: scudd



Chlorinated Solvent Remedial Excavations

Petroleum Hydrocarbon Remedial Excavations

Groundwater Plume
dashed where inferred

Groundwater Monitoring Well

Subject Property

Historical Property Feature

Building Footprint

Tax Parcel

Power Line

Storm Drain Line

Sanitary Sewer Line

Communication Line

Catch Basin

Storm Manhole

Sanitary Manhole

0 22.5 45
Feet

Note: Tax parcel data from King County was minorly adjusted based on site knowledge.

Areas Requiring Remedial Action Evaluation

Cleanup Action Plan
Mount Baker Properties Site
Seattle, Washington

Aspect Consulting	DEC-2019	BY: KB / RAP	FIGURE NO. 6
	PROJECT NO. 160324	REVISED BY: AY / RAP	

GIS Path: T:\projects_8\MBHADevelopment_160324\Delivered\FS_CAP\06 Areas Requiring Remedial Action.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 12/27/2019 || User: trulien || Print Date: 12/27/2019

CHLORINATED SOLVENT SOURCE AREA EXCAVATION DETAILS

North Shoring: Approximately 2,270 ft²
East Shoring: Approximately 2,265 ft²
South Shoring: Approximately 1,920 ft²
PCE-Contaminated Soil to be Removed: Approximately 8,250 tons
Dewatering: Up to 215,000 gallons to be removed, treated, and disposed of off-site

PETROLEUM HYDROCARBON SOURCE AREA WEST EXCAVATION DETAILS

Shoring: Approximately 2,500 ft²
Petroleum-Contaminated Soil to be Removed: Approximately 3,725 tons
Dewatering: Up to 75,000 gallons to be removed, treated, and disposed of off-site

PETROLEUM HYDROCARBON SOURCE AREA SOUTHEAST EXCAVATION DETAILS

Shoring: Approximately 2,500 ft²
Petroleum-Contaminated Soil to be Removed: Approximately 940 tons
Dewatering: Up to 25,000 gallons to be removed, treated, and disposed of off-site

Remedial Excavation Potholing to Elevation 59
Remedial Excavation to Elevation 60
Remedial Over-Excavation to Elevation 57
Remedial Excavation Potholing to Elevation 55
Remedial Excavation Potholing to Elevation 56
Remedial Excavation to 15 feet Below Redevelopment Grade (approx. Elevation 57)
Remedial Excavation to Elevation 43
Remedial Excavation to Elevation 46

S MC CLELLAN ST
MARTIN LUTHER KING JR WAY S
29TH AVE S

0 25 50 Feet

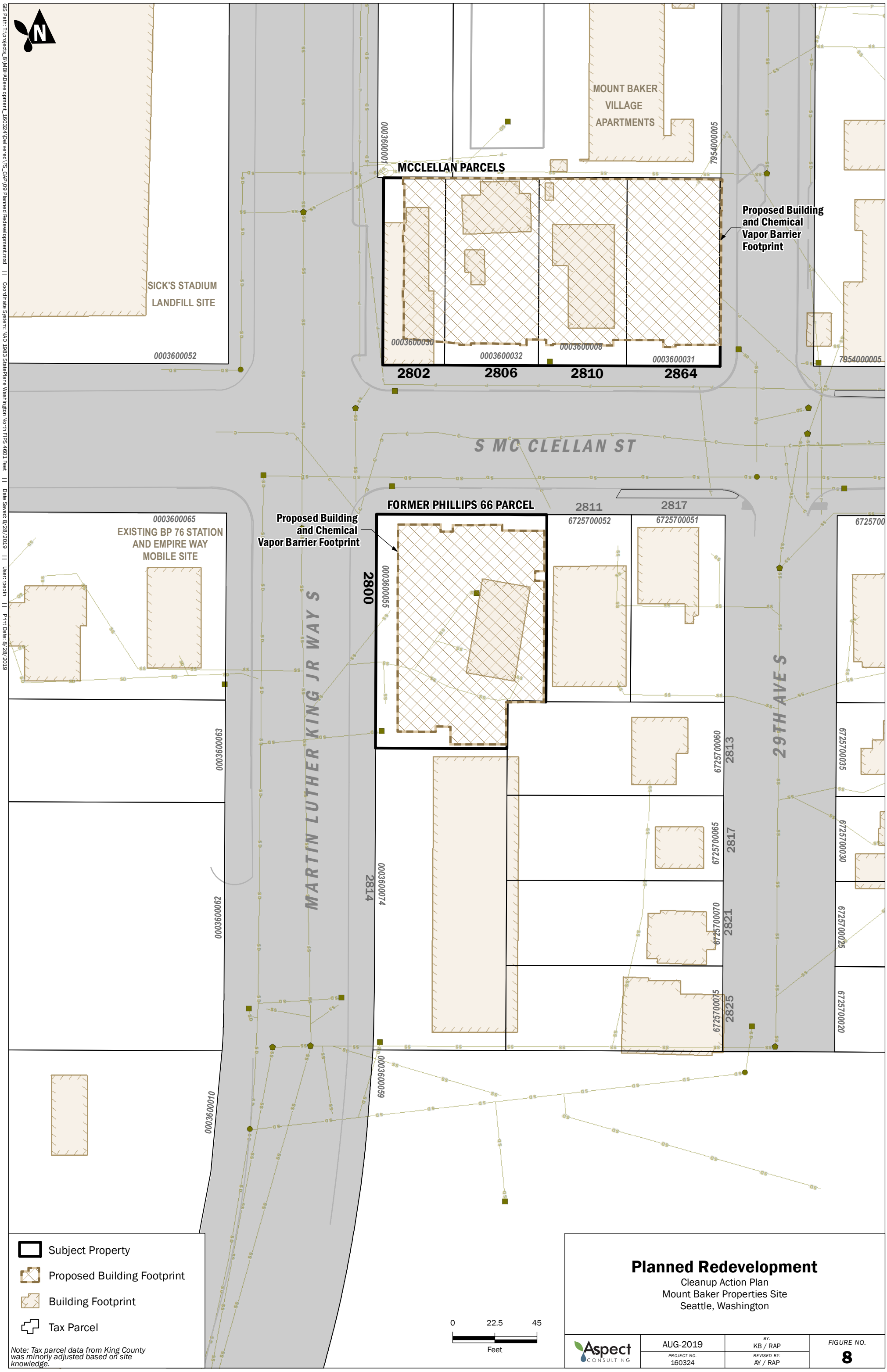
Notes:
Contingency In Situ Chemical Reduction Injection Transect locations shown are conceptual for the FS and if determined necessary after 5 years of In Situ Chemical Reduction monitoring, the location and design details will be determined at that time based on post-source removal groundwater conditions.
Tax parcel data from King County was minorly adjusted based on site knowledge.

- Contingency *In Situ* Chemical Reduction Transect
- Chlorinated Solvent Remedial Excavation to Elevation 57
- Chlorinated Solvent Remedial Excavation to Elevation 60
- Petroleum Hydrocarbon Source Area Remedial Excavation
- Area Targeted for Over-Excavation
- Shoring
- Groundwater Monitoring Well to be Abandoned
- Groundwater Monitoring Well
- Soil Boring
- Elevation, ft NAVD88 *Estimated from King County LiDAR, 2016*
- Subject Property
- Building Footprint
- Tax Parcel
- Power Line
- Storm Drain Line
- Sanitary Sewer Line
- Communication Line
- Catch Basin
- Storm Manhole
- Sanitary Manhole

Cleanup Action Conceptual Layout

Cleanup Action Plan
Mount Baker Properties Site
Seattle, Washington

Aspect Consulting	DEC-2019	BY: AY / RAP	FIGURE NO. 7
	PROJECT NO. 160324	REVISED BY: ---	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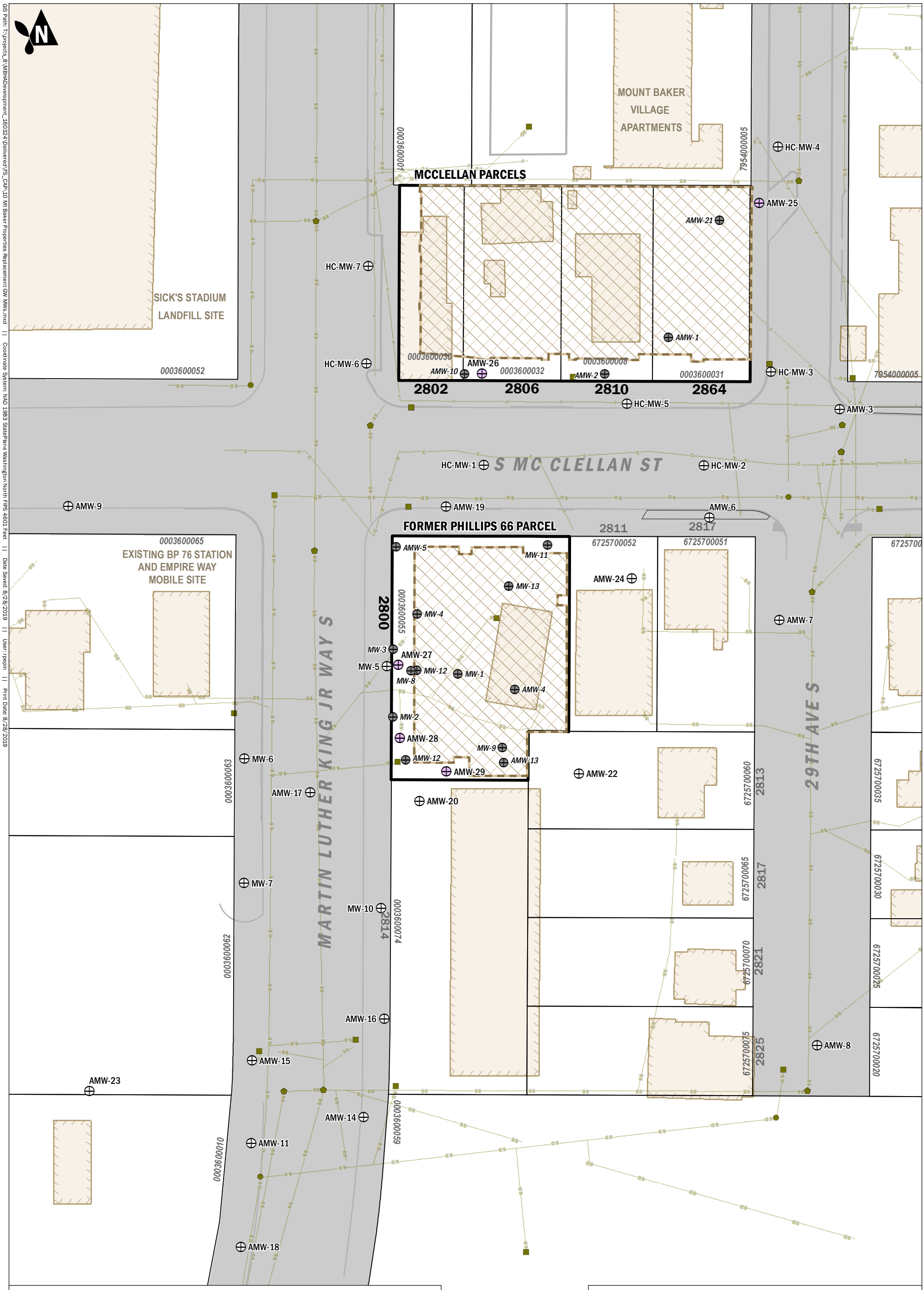
N
SICK'S STADIUM LANDFILL SITE
0003600052
MOUNT BAKER VILLAGE APARTMENTS
0003600007
7954000005
MCCLELLAN PARCELS
Proposed Building and Chemical Vapor Barrier Footprint
0003600030
0003600032
0003600008
0003600031
2802
2806
2810
2864
7954000005
S MC CLELLAN ST
FORMER PHILLIPS 66 PARCEL
2811
2817
0003600065
EXISTING BP 76 STATION AND EMPIRE WAY MOBILE SITE
Proposed Building and Chemical Vapor Barrier Footprint
6725700052
6725700051
6725700
2800
0003600055
MARTIN LUTHER KING JR WAY S
29TH AVE S
0003600063
6725700060
2813
6725700035
6725700065
2817
6725700030
0003600062
0003600074
2814
6725700070
2821
6725700025
6725700075
2825
6725700020
0003600059
0003600010
Subject Property
Proposed Building Footprint
Building Footprint
Tax Parcel
Note: Tax parcel data from King County was minorly adjusted based on site knowledge.
0
22.5
45
Feet
Planned Redevelopment
Cleanup Action Plan
Mount Baker Properties Site
Seattle, Washington
Aspect CONSULTING
AUG-2019
BY: KB / RAP
FIGURE NO. 8
PROJECT NO. 160324
REVISED BY: AY / RAP



Mt. Baker Properties Replacement Groundwater Monitoring Wells

Cleanup Action Plan
Mount Baker Properties Site
Seattle, Washington

Aspect Consulting	AUG-2019	BY: KB / RAP	FIGURE NO. 9
	PROJECT NO. 160324	REVISED BY: AY / RAP	

GIS Path: T:\projects_8\MBHADevelopment_160324\Delivered\FS_CAP\10 Mt Baker Properties Replacement GW MWs.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 8/28/2019 || User: rpepin || Print Date: 8/28/2019

APPENDIX A

Report Limitations and Guidelines for Use

REPORT LIMITATIONS AND USE GUIDELINES

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of the Client. No other party may rely on this report or the product of our services without the express written consent of Aspect Consulting, LLC (Aspect). This limitation is to provide our firm with reasonable protection against liability claims by third parties with whom there would otherwise be no contractual conditions or limitations and guidelines governing their use of the report. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and recognized standards of professionals in the same locality and involving similar conditions.

Services for Specific Purposes, Persons and Projects

Aspect has performed the services in general accordance with the scope and limitations of our Agreement. This report has been prepared for the exclusive use of the Client and their authorized third parties, approved in writing by Aspect. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

This report is not, and should not, be construed as a warranty or guarantee regarding the presence or absence of hazardous substances or petroleum products that may affect the subject property. The report is not intended to make any representation concerning title or ownership to the subject property. If real property records were reviewed, they were reviewed for the sole purpose of determining the subject property's historical uses. All findings, conclusions, and recommendations stated in this report are based on the data and information provided to Aspect, current use of the subject property, and observations and conditions that existed on the date and time of the report.

Aspect structures its services to meet the specific needs of our clients. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and subject property. This report should not be applied for any purpose or project except the purpose described in the Agreement.

This Report Is Project-Specific

Aspect considered a number of unique, project-specific factors when establishing the Scope of Work for this project and report. You should not rely on this report if it was:

- Not prepared for you
- Not prepared for the specific purpose identified in the Agreement
- Not prepared for the specific real property assessed
- Completed before important changes occurred concerning the subject property, project or governmental regulatory actions

If changes are made to the project or subject property after the date of this report, Aspect should be retained to assess the impact of the changes with respect to the conclusions contained in the report.

Geoscience Interpretations

The geoscience practices (geotechnical engineering, geology, and environmental science) require interpretation of spatial information that can make them less exact than other engineering and natural science disciplines. It is important to recognize this limitation in evaluating the content of the report. If you are unclear how these "Report Limitations and Use Guidelines" apply to your project or site, you should contact Aspect.

Discipline-Specific Reports Are Not Interchangeable

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually address any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding the subject property.

Environmental Regulations Are Not Static

Some hazardous substances or petroleum products may be present near the subject property in quantities or under conditions that may have led, or may lead, to contamination of the subject property, but are not included in current local, state or federal regulatory definitions of hazardous substances or petroleum products or do not otherwise present potential liability. Changes may occur in the standards for appropriate inquiry or regulatory definitions of hazardous substance and petroleum products; therefore, this report has a limited useful life.

Property Conditions Change Over Time

This report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time (for example, Phase I ESA reports are applicable for 180 days), by events such as a change in property use or occupancy, or by natural events, such as floods, earthquakes, slope failure or groundwater fluctuations. If more than six months have passed since issuance of our report, or if any of the described events may have occurred following the issuance of the report, you should contact Aspect so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Phase I ESAs – Uncertainty Remains After Completion

Aspect has performed the services in general accordance with the scope and limitations of our Agreement and the current version of the “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”, ASTM E1527, and U.S. Environmental Protection Agency (EPA)'s Federal Standard 40 CFR Part 312 "Innocent Landowners, Standards for Conducting All Appropriate Inquiries".

No ESA can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with subject property. Performance of an ESA study is intended to reduce, but not eliminate, uncertainty regarding the potential for environmental conditions affecting the subject property. There is always a potential that areas with contamination that were not identified during this ESA exist at the subject property or in the study area. Further evaluation of such potential would require additional research, subsurface exploration, sampling and/or testing.

Historical Information Provided by Others

Aspect has relied upon information provided by others in our description of historical conditions and in our review of regulatory databases and files. The available data does not provide definitive information with regard to all past uses, operations or incidents affecting the subject property or adjacent properties. Aspect makes no warranties or guarantees regarding the accuracy or completeness of information provided or compiled by others.

Exclusion of Mold, Fungus, Radon, Lead, and HBM

Aspect’s services do not include the investigation, detection, prevention or assessment of the presence of molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detection, assessment, prevention or abatement of molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts. Aspect’s services also do not include the investigation or assessment of hazardous building materials (HBM) such as asbestos, polychlorinated biphenyls (PCBs) in light ballasts, lead based paint, asbestos-containing building materials, urea-formaldehyde insulation in on-site structures or debris or any other HBMs. Aspect’s services do not include an evaluation of radon or lead in drinking water, unless specifically requested.