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Remedial Investigation/Feasibility Study/ Cleanup Action Plan

Onni 106th Ave Bellevue LLC
606 & 620 106th Avenue Northeast
Bellevue, Washington 98004
VCP Site No. NW 3236 (Retired)
Facility Site ID: 73977
Cleanup Site ID: 14996

Prepared For:

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ABBREVIATIONS AND ACRONYMS

Abbreviation/ Acronym	Definition
AMSL	Above mean sea level
bgs	Below ground surface
CAP	Cleanup Action Plan
CAR	Cleanup Action Report
cis-1,2-DCE	cis-1,2-Dichloroethene
COC	Contaminant of concern
CSM	Conceptual site model
CUL	Cleanup level
DCA	Disproportionate cost analysis
EC	Environmental Covenant
Ecology	Washington State Department of Ecology
EMH Plan	Environmental Materials Handling Plan
FS	Feasibility Study
KCIW	King County Industrial Wastewater
µg/L	Micrograms per liter
mg/kg	Milligrams per kilogram
MTCA	Model Toxics Control Act
NFA	No Further Action
O&M	Operations and maintenance
Onni	ONNI Group
PCE	Tetrachloroethene, or perchloroethylene
PLP	Potentially liable person
RAO	Remedial action objectives
RI	Remedial Investigation
RI/FS/CAP	Remedial Investigation/Feasibility Study/Cleanup Action Report
SL_{gw}	Screening level for groundwater
TCE	Trichloroethene
TEE	Terrestrial Ecological Evaluation
trans-1,2-DCE	trans-1,2-Dichloroethene
TRC	TRC Environmental Corporation
VC	Vinyl chloride
VCP	Voluntary Cleanup Program
VOCs	Volatile organic compounds
WAC	Washington Administrative Code
YDS^3	Cubic yards

1.0 INTRODUCTION

TRC Environmental Corporation (TRC) is pleased to submit this combined *Remedial Investigation/Feasibility Study/Cleanup Action Plan* (RI/FS/CAP or Report) for the properties located at 606 and 620, 106th Avenue NE in Bellevue, Washington (Subject Property). The Subject Property is currently owned by the ONNI Group (Onni) and consists of the King County Tax Parcels 154410-0214 (606 106th Avenue NE) and 154410-0217 (620 106th Avenue NE). The location of the Subject Property is shown on Figure 1. Boundaries of the Subject Property are shown relative to surrounding properties and physical features on Figure 2. With the submission of this Report the Subject Property will be enrolled in the Washington State Department of Ecology (Ecology) Expedited Voluntary Cleanup Program (EVCP).

This Report has been prepared on behalf of Onni and has been requested in support of their ongoing efforts to meet the requirements of the Model Toxics Control Act (70A.305 Revised Code of Washington [RCW]) and its implementing regulations (Washington Administrative Code [WAC] 173-340; collectively "MTCA").

As described in this Report, Onni intends to remediate the contamination on the Subject Property during a planned redevelopment in 2022. This Report evaluates the most appropriate methods for completing that on-property remediation and the means and methods for implementing that alternative and confirming its effectiveness.

1.1 Assessment and Condition Summary

The Subject Property was previously enrolled in the Voluntary Cleanup Program (VCP) as Onni 106th Ave Bellevue LLC with the Site No. NW3236 (Site). The original Site Manager was Mr. Michael Warfel and the Site Manager at the time the Site was retired from the VCP was Ms. Jing Song. After initial enrollment in the VCP, Onni was progressing with plans for remediation during redevelopment. With the advent of the global COVID pandemic, all work on the project was stopped and the Site was retired from the VCP in about July 2020.

At the time of its retirement from the VCP, it was acknowledged by Ecology that the Subject Property had been sufficiently characterized for enrollment in the VCP and that the source of the on-property contamination was historical releases from the hydraulically upgradient Former Thinker Toys Site (VCP Site No. NW2338). As described in the *Remedial Investigation and Feasibility Study, Sterling Realty Organization, Bellevue Corner Property, 10605 and 10619 NE 8th Street, Bellevue, Washington*, dated December 15, 2014 prepared by GeoEngineers (GeoEngineers RI/FS), soil and groundwater in portions of the Subject Property are contaminated by tetrachloroethene (PCE) and associated volatile organic compounds (VOCs), including trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE). The primary source of the PCE and associated compounds has been identified as a former dry-cleaner that operated between 1976 and 1986 at 10610 NE 8th Street, directly north of the Subject Property, across NE 8th Street (Figure 2).

The Subject Property is impacted as a result of passive migration from the Former Thinker Toys Site (Cleanup Site ID 2477). Pursuant to RCW 70A.305.020(22)(iv), Onni maintains that it is not a potentially

liable person (PLP) for the PCE impacts at the Subject Property because the PCE impacts are migrating onto the Subject Property in a groundwater plume from upgradient source(s) including without limitation the Thinker Toys Property to the north.

There are no data to suggest that the Subject Property is a source of the contamination known to exist on the Subject Property. For the purposes of this Report, "Site" shall refer to all areas on the Subject Property that have been impacted as a result of migration from third-party upgradient source property(ies).

Environmental investigations have been completed on the Subject Property and on the north adjacent property, known as the Bellevue Corner Unocal 4511 (Cleanup Site ID No. 7649, Facility Site ID 5569973 or "Schnitzer Property"). The Schnitzer Property does not currently appear to be enrolled in the VCP.

The Schnitzer Property is also apparently impacted with releases originating from the Thinker Toys Property. Impacts extend through the Schnitzer Property and onto the northern portion of the Subject Property. Those impacts are present at varying depths and extend onto the Subject Property at depths between 50 to 65 feet below grade. The impacts to the Subject Property are within deep soil and groundwater and are not present in shallow soil, further confirming that there has been no historical PCE release on the Subject Property. The distribution of the observed impacts is wholly consistent with impacts to the Subject Property solely through passive migration from the upgradient third-party source(s).

Investigations completed on the Subject Property and the Schnitzer Property combined with the significant work performed on the source property have served to complete the combined RI of the Former Thinker Toys Site. No substantial data gaps exist, and the Site is sufficiently well-characterized to support the completion of this Report. That opinion is supported by Ecology's prior acceptance of the Site into the VCP.

It is important to consider that the Schnitzer Property is currently undergoing redevelopment including mass excavation to approximately 55 feet below grade. The Schnitzer mass excavation and planned building foundation and parking garage will be complete before redevelopment of the Subject Property. The redevelopment of the Schnitzer Property will effectively serve as a cut-off wall and barrier to future migration of contaminants of concern (COCs) in groundwater from the upgradient source(s) to the Subject Property.

The preferred cleanup action alternative in this Report meets the requirements of MTCA and is protective of human health and the environment. The selected cleanup action will be implemented under the EVCP. In addition, this Report addresses the essential elements for such reports as presented in *Remedial Investigation Checklist* (Publication #16-09-006) *Feasibility Study Checklist* – requirement (Publication #16-09-007) and *Cleanup Action Plan Checklist* (Publication #16-09-008).

With the enrollment of the Subject Property into the EVCP and the submission of this Report, Onni and TRC request an advisory opinion from Ecology that the selected remedy meets the substantive requirements of MTCA and that upon completion of the selected remedy a No Further Action (NFA)

determination for the Site is likely. Upon receipt of the advisory opinion, the remedial action will be implemented during the redevelopment action. A final *Cleanup Action Report* (CAR) documenting the successful implementation of the CAP will ultimately be submitted to Ecology in support of a NFA determination.

1.2 Document Organization

This Report is as a combined RI/FS/CAP report. Certain elements of those reports, when prepared on a standalone basis, would be redundant when provided in a combined report. The required elements of all three reports are presented herein using the general organization summarized below.

The RI components are included in Sections 2.0 through 4.0.

- **Section 2.0** – This section presents the background on the Subject Property, including physical setting and description, environmental receptors and a summary of remedial investigations on the Subject Property and upgradient properties;
- **Section 3.0** – This section discusses the conceptual site model, including the contaminants of concern, nature and extent of contamination, and evaluation of potential receptors and pathways, including a terrestrial ecological evaluation of the Subject Property;
- **Section 4.0** – This section presents the proposed cleanup standards for the Subject Property;

The FS components are included in Sections 5.0 and 6.0.

- **Section 5.0** – This section includes the FS for the Subject Property including TRC's recommended remedial alternative;
- **Section 6.0** – This section presents the selected cleanup action based on the FS;

The CAP elements are included in Sections 7.0 through 12.0.

- **Section 7.0** – This section outlines the cleanup action objectives;
- **Section 8.0** – This section outlines the corrective action implementation sequence;
- **Section 9.0** – This section presents the corrective action schedule;
- **Section 10.0** – This section outlines the final documentation following completion of the corrective action; and;
- **Section 11.0** – This section presents the reference information for the documents cited in the text.

- **Section 12.0 –** This section outlines the limitations of this document.

2.0 BACKGROUND

The Subject Property is located at 606 and 620 106th Avenue Northeast in Bellevue, Washington, and is also identified as King County tax parcels 154410-0214 and 154410-0217, totaling 4.02 acres and zoned Commercial. The Subject Property is illustrated on Figure 2.

2.1 Subject Property Physical Description

Surface topography of the Subject Property is generally flat, with slightly higher elevations to the north and east. The Subject Property includes current Barnes & Noble Books and DOXA Church buildings. The Barnes & Noble Books building is a 1957-vintage rectangular-shaped building of masonry block construction enclosing approximately 27,900 square feet. The DOXA Church is a 1961-vintage rectangular shaped building of steel-frame construction enclosing approximately 40,245 square feet. According to the City of Bellevue's zoning map, the Subject Property and adjacent properties are zoned Downtown-Office (DNTNO-1 and DNTNO-2; City of Bellevue 2013). This zoning eliminates the possibility of ground floor residential uses.

The Subject Property is bordered to the north by the Schnitzer Property, to the east by commercial high-rise towers, to the south by the Bellevue Connection Shopping Mall, and to the west by 106th Avenue Northeast. The parking areas surrounding the two on-property buildings are paved with asphalt and contain strips of landscaping between some of the parking areas.

2.1.1 Geology

Previous investigations on and adjacent to the Subject Property encountered approximately 5 to 7 feet of fill material or reworked historical surface soils consisting of loose to medium dense silty sand with gravel. The shallow soil is underlain by Vashon Till (Pacific NW Geologic Mapping; USGS 2007), a unit of dense to very dense glacially compacted, poorly sorted and locally cemented silt, sand, gravel, and cobbles with localized sand-rich zones. The glacial till typically extends to depths of 35 to 40 feet below ground surface (bgs). Sand-rich zones within the glacial till were encountered on the norther adjacent property at depths of about 20 to 30 feet bgs, and on the Subject Property at depths of about 30 to 40 feet bgs. Shallow, perched or intermittent groundwater is associated with these sandier zones within the denser glacial till matrix. The glacial till is underlain by the more permeable sand and gravelly-sand deposits of the Vashon Advance Outwash. Outwash extends to depths of approximately 75 to 90 feet bgs (Terra Associates 2008). Dense, silty sand to sandy silt was encountered beneath the Advance Outwash in the deepest explorations on the adjacent property that extend to 101.5 feet bgs.

2.1.2 Hydrogeology

Two water-bearing zones were identified beneath the Subject Property during previous investigations.

A shallow, discontinuous, perched water-bearing zone associated with sandy lenses within the Vashon Till is encountered from approximately 20 to 40 feet bgs. Three shallow wells at the Subject Property installed on behalf of the northern adjacent (Schnitzer) property owner are screened in this perched water-bearing zone (URS-MW-5, URS-MW-6, and URS-MW-7). Based on May 2010 groundwater depth measurements in these wells and shallow upgradient wells located on the adjacent Schnitzer Property and upgradient Former Thinker Toys Site, perched groundwater generally flows to the south and south-southeast with a gradient of 0.046 feet per foot. More recent groundwater measurements in November 2020, from wells on the northern Schnitzer Property and including the perched water-bearing zone wells on the Subject Property, groundwater flow is confirmed to the south-southeast. However, the three wells on the Subject Property were reported dry in November 2020 (Aspect 2020).

A deeper regional aquifer is located in the lower portions of the underlying Vashon Advance Outwash. Six deep borings have been installed on the Subject Property on behalf of Onni (TH17-01 through TH17-06) to evaluate groundwater conditions and assess whether PCE-impacted groundwater from upgradient sources has migrated onto the Subject Property. Three of the borings (TH-17-02, TH17-04, and TH17-05) were converted to deep monitoring wells MW17-01, MW17-02, and MW-17-03, respectively. Copies of the boring logs and well completion details are included in Attachment A.

Additionally, four deep wells have been installed and monitored on the adjacent Schnitzer property (URS-MW-8 [SB-11], B2/MW-2, B1/MW1, and B4/MW4). Depths to groundwater in these monitoring wells ranged between 68 and 93 feet bgs from 2008 to 2020. Based on a comparison of groundwater measurements from August 2019 and July 2020 (Aspect 2020), groundwater flow direction in the Advance Outwash is south/south-east which is generally consistent with the shallow groundwater flow.

2.1.3 Environmental Receptors

The Subject Property is located within a highly developed and urbanized area of Bellevue, Washington. There are no terrestrial receptors near the Subject Property.

Surface water is Meydenbauer Bay located about 0.75 miles to the southwest. Surface water on the Subject Property is controlled through a stormwater system with no off-property sheet flow or open channel flow.

Groundwater beneath the Subject Property is likely hydraulically connected to Lake Washington. However, given the distance to the lake (0.75 miles) it is unlikely that any potential impacts at the Subject Property would have a realistic potential to impact surface water. Current groundwater analytical data indicate that the impacts originating from the third-party upgradient source(s) do not extend beyond the southern boundary of the Subject Property.

2.2 Subject Property History

Detailed information regarding the history and ownership of the Subject Property and was presented in the *Phase I Environmental Site Assessment* (ESA), dated November 15, 2017, and prepared by Environmental Partners Inc., and is summarized below (EPI 2017).

The Subject Property was used as fruit orchards and gardens until the late 1950s when the Subject Property was first commercially developed. A bowling alley was constructed at the subject property in 1957 and operated as Belle Lanes through approximately 1985, then as Barnes & Noble between 1993 through today. The DOXA Church building was originally constructed in 1961 as a theater. Parking areas were initially paved in 1963.

2.3 Remedial Investigation Summary

Multiple environmental studies and cleanups have been performed on adjacent properties between 1991 to 2011, and on the Subject Property in 2008, 2010, 2011, and 2017. During these environmental studies, a number of borings and wells were advanced and sampled on the Subject Property and on the adjacent property to the north and on the Former Thinker Toys Site. Tables 1 and 2 include the tabulated soil and groundwater data for the Subject Property originally presented in the "Summary of Environmental Considerations Due to PCE Impacts Technical Memorandum" (Technical Memorandum; EPI 2019). Soil and groundwater sampling locations associated with these studies are shown on Figure 3.

While the Schnitzer Property (Bellevue Corner Unocal 4511) has undergone several phases of investigation related to both petroleum and VOC impacts, it was ultimately determined at the source of chlorinated VOCs on that property was migration from the Former Thinker Toys Site. Investigation of the Subject Property has confirmed that those impacts extend across the Schnitzer Property and impact the northern portion of the Subject Property. A comprehensive evaluation of the combined data from these investigations defining the nature and extent of contamination at the Subject Property and on the adjacent Schnitzer Property to the north, was presented in the Technical Memorandum.

Based on the information and data previously provided in the Technical Memorandum Ecology accepted the Subject Property into the VCP and concurred that the RI of the Subject Property was substantially complete and could support an FS.

TRC and Onni acknowledge that there is a data gap on the Subject Property. That data gap relates to the extent of soil and groundwater impacts beneath the existing Barnes & Noble building. Given the depth of the known impacts, the size of the drilling equipment necessary to access those depths, and the limited access inside the building, that data gap can only reasonably be filled after demolition of the building. This data gap does not preclude the completion of this this Report. As discussed in additional detail below, this data gap will be filled after demolition and prior to implementing the CAP. The CAP includes the additional detailed assessment required for soil characterization and preparation of a request for a Contained-In Determination from Ecology for soil disposal.

The CAP includes contingencies and procedures designed to address variations in the actual volume of impacted soil versus the volume and extent assumed in the CAP.

3.0 CONCEPTUAL SITE MODEL

A discussion of the nature and extent of the contamination at the Subject Property is presented in the Technical Memorandum (EPI 2019) and is summarized below.

It is important to consider that the Schnitzer Property us currently undergoing redevelopment including mass excavation to about 55 feet below grade. That mass excavation and building foundation will be complete before redevelopment of the Subject Property. The redevelopment of the Schnitzer Property will effectively serve as a substantial cut-off wall and barrier to future migration of COCs in groundwater onto the Subject Property.

3.1 Contaminants of Concern

The COCs for the Subject Property are those compounds that have been detected in soil and groundwater at concentrations exceeding their respective MTCA Method A or B Cleanup Levels (CULs). Based on the results of the environmental investigations, COCs for the Subject Property include PCE, TCE, cis-1,2-DCE, trans-1,2-dichloroethene (trans-1,2-DCE), and vinyl chloride (VC).

3.2 Sources and Contaminant Migration

PCE had been detected in soil in borings north of the Subject Property's northern property line in samples from borings URS-MW-4, URS-SB-11, and URS-SB-13. However, the majority of soil borings advanced on the Schnitzer property do not extend sufficiently deep to encounter the impacts noted on the Subject Property, which is discussed below in additional detail.

PCE had also been detected in soil in the interior of the Subject Property from borings for wells URS-MW-7I and URS-MW7D (i.e., URS-SB-16) and in borings URS-SB-19, URS-SB-20, and URS-SB 22. PCE concentrations in samples from URS-MW-4, URS-SB-13, URS-MW-7I, and URS-MW-7D exceeded the Model Toxics Control Act Regulation (Washington Administrative Code [WAC] 173-340; "MTCA") Method A soil cleanup level for unrestricted land uses (MTCA Method A Soil CUL) of 0.05 milligrams per kilogram (mg/kg). These boring locations are indicated on Figure 3.

There is no known source on the Subject Property for the identified impacts to soil or groundwater. There is no vertical connection between any near surface impacts and deeper soil impacts. Additionally, there is no indication in the historical record for the Subject Property of a source that could have resulted in the observed impacts to soil and groundwater. The available data indicate an apparent lateral connection and continuity with PCE on the adjacent property to the north, which is known to have originated on the Former Thinker Toys Site. The previously known impacts appear to have migrated from north to south in

the known hydraulically downgradient direction. Based on the available data, it is logical to conclude that the impacts to the Subject Property originate from properties to the north and hydraulically upgradient.

PCE is the predominant compound in soil and groundwater at the Subject Property. The only other detected compound in groundwater was cis-1,2-DCE, which is a known degradation product of PCE. However, cis-1,2-DCE has not been detected at a concentration exceeding cleanup level. Other compounds commonly associated with the environmental degradation of PCE have not been detected on the Subject Property.

3.3 Soil

A comprehensive summary of data for PCE and related compounds impacting soil on the Subject Property is presented in Table 1. Soil sampling locations associated with the data are shown on Figure 3.

Impacted soil in the vadose zone and shallow zone has not been identified on the Subject Property. However, PCE-impacted soil has been identified in borings advanced on the adjacent property to the north in close proximity to the property boundary. PCE was detected in shallow soils at concentrations of 0.17 milligrams/kilogram (mg/kg) and 0.12 mg/kg at depths of 12 and 30 feet bgs, respectively in boring URS-MW-4 installed immediately north of the property boundary near a catch basin on the Schnitzer property. Therefore, it is possible that shallow PCE impacts may be present on the Subject Property immediately south of the northern property boundary at depths of between 5 and 35 feet bgs. A conservative estimated extent of PCE impacts to shallow soil (5 to 35 feet bgs) is shown in plan view on Figure 3 and in cross-section on Figure 4.

Impacts to soil in the deeper saturated zone also appear to have migrated laterally from the north and were detected in borings on the Subject Property. Soil samples from boring SB-16 at 60 and 65 feet bgs, boring URS-SB-19 at 60 feet bgs, and boring TH17-02 at 55 feet bgs contained PCE at concentrations greater than the 0.025 mg/kg method detection limit (MDL). Only the sample from boring TH17-02 at 65 feet bgs exceeded the MTCA Method A Soil cleanup level for unrestricted land uses. The estimated extent of PCE impacts to deeper soil (50 to 70 feet bgs) is shown in plan view on Figure 3 and in cross-section on Figure 4. As acknowledged above, additional assessment of soil conditions beneath the Barnes & Noble building will be assessed after demolition and all impacted soils will be included in the remedial action.

3.4 Groundwater

Groundwater in the shallow and deep aquifers on the Former Thinker Toys Site and Schnitzer Site is primarily impacted with PCE, and to a lesser degree by TCE, cis-1,2-DCE, chloroform, and VC. Groundwater beneath the Subject Property is only impacted with PCE and cis-1,2-DCE in the shallow aquifer and only PCE in the deeper aquifer. Additional detail is provided below.

Figure 5 presents the estimated extent of dissolved-phase impacts onto the Subject Property. The lateral extent of aquifer groundwater impacts beneath the existing Barnes & Noble building will be further characterized during the planned post-demolition sampling and analysis.

3.4.1 Shallow Aquifer

The shallow aquifer beneath the Subject Property is impacted with PCE with a reported maximum concentration of 21 micrograms per liter (µg/L) in the sample collected from URS-MW-7 in 2017. Both PCE and cis-1,2-DCE have been detected in shallow groundwater samples from URS-MW-7 in 2017 and 2020, with only PCE has been present at a concentration exceeding the MTCA Method A CUL of 5.0 µg/L.

3.4.2 Deep Aquifer

The deep aquifer beneath the Subject Property is impacted with PCE with a reported maximum concentration of 7.7 µg/L in the sample collected from MW-17-01 in 2017. This result exceeds the MTCA Method A CUL of 5.0 µg/L. Only PCE has been detected in deep groundwater samples from MW-17-01 in 2017 and 2020. PCE was not detected in the 2017 groundwater samples collected from wells MW-17-02 and MW-17-03.

Table 2 presents a comprehensive summary of groundwater analytical data collected to date on the Subject Property. The estimated extent of PCE-impacts to groundwater beneath the Subject Property is shown on Figure 5.

3.5 Soil Vapor

The concentrations of PCE in groundwater do not exceed the vapor intrusion screening level for groundwater (SL_{gw}) of 24 µg/L and therefore do not indicate the need for either further vapor intrusion assessment.

The potential need for further vapor intrusion assessment or the use of an engineering control such as a vapor barrier would be further evaluated based upon the results of additional post-demolition assessment beneath the current Barnes & Noble building.

Regardless, the general construction of the redevelopment will necessarily incorporate a 15-mil, seam sealed water vapor barrier and about a 12-inch (or greater) bottom slab thickness. This thick slab and robust barrier would nonetheless combine to provide a robust vapor intrusion barrier.

3.6 Potential Receptors and Exposure Pathways

Potential human receptors associated with the following exposure pathways include construction workers, current or future occupational workers, visitors, and customers. Potential indoor air exposures

are limited to workers, visitors, and customers within the current and planned development. Potential vapor exposures will be mitigated as a result of future remedial actions during planned development.

Direct exposure to soil and groundwater is only considered for construction works during planned remedial actions and development because the Subject Property is currently covered with asphalt or concrete in areas where contaminants have been detected in soil or groundwater at concentrations exceeding regulatory levels. Following redevelopment, soil contamination would be eliminated from property line to property line and groundwater contamination from off-Site, upgradient sources would be managed with engineering controls.

The following is a summary of the potential exposure pathways and receptors at the Subject Property:

- **Soil leaching to groundwater**. Contaminants in soil can leach to groundwater by infiltration of precipitation below unpaved or gravel surface areas through contaminated soil, or where groundwater is in contact with contaminated soil. This pathway will not exist after redevelopment on the Subject Property due to the complete removal of soil to depth of 80 feet below grade from property line to property line and construction of a new multi-story, zero lot line building. The redevelopment will eliminate any current or future potential exposure pathways.

- **Direct contact with soil (construction workers only)**. Based on the current and planned paved and fully developed use of the Subject Property, direct contact with contaminants in soil at the Subject Property would only apply to construction workers during redevelopment activities. Following redevelopment, this pathway will be incomplete. The observed maximum concentrations in soil for the COCs do not exceed the MTCA Method B soil cleanup levels based on direct contact or any applicable acute or short-term exposure standards that could potentially apply to construction workers.

- **Direct contact with groundwater (construction workers only).** Based on the current and planned paved and fully developed use of the Subject Property, direct contact with contaminants in groundwater at the Subject Property would only apply to construction workers during redevelopment activities. Following redevelopment there is no actual or potential exposure to this pathway.

- **Consumption of groundwater.** Although this is not a likely exposure pathway at the Subject Property, it must be considered based upon MTCA regulations. Based on the current and planned paved and fully developed use of the Subject Property, the potential for ingestion/consumption of groundwater at the Subject Property would only apply to construction workers during redevelopment activities. Groundwater beneath the Subject Property is not currently nor is it expected to be used as a drinking water source in the future. Following redevelopment, there is no reasonable potential for this exposure pathway on the Subject Property. It is acknowledged that, depending upon the residual impacts to groundwater on the Subject Property following redevelopment, it may be necessary to

implement an environmental covenant preventing the use of groundwater to eliminate this exposure pathway.

- **Inhalation of volatilized contaminant vapors from soil and groundwater.** Soil vapor from contaminated soil and groundwater within or beyond the boundaries of the Subject Property has the potential to migrate and expose indoor air receptors. Although this pathway may apply to construction workers during redevelopment, remedial actions and planned engineering controls (segregated footing drains for contaminated groundwater management) during construction would mitigate potential vapor impacts and this pathway would be incomplete.

A receptor – exposure pathway analysis is shown graphically on Figure 6.

Terrestrial ecological exposures do not require further evaluation based on exclusions contained in the MTCA regulations under WAC 173-340-7491(1)(b), and the current and planned full coverage of the Subject Property by asphalt, concrete, or buildings, as described in Section 3.7.

3.7 Terrestrial Ecological Evaluation

In accordance with WAC 173-340-7490, a terrestrial ecological evaluation (TEE) was performed for the Site to determine if it poses a threat to the terrestrial environment. The Site qualifies for the TEE exclusion set forth at WAC 173-340-7491(1)(c)(i), which states:

> *"For sites with hazardous substances other than those specified in (c)(ii) of this subsection [chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxophene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene], there is less than 1.5 acres of contiguous undeveloped land on or within 500 feet of any area of the Site."*

Since these conditions are met, terrestrial ecological exposures do not require further consideration. The completed *Terrestrial Ecological Evaluation Form* is provided as Attachment B.

4.0 PROPOSED CLEANUP STANDARDS

Cleanup standards consist of CULs and the point of compliance at which those levels must be met. Cleanup standards are used as the basis for developing remedial action objectives for a cleanup action.

4.1 Cleanup Levels

Site CULs for affected media on the Subject Property were evaluated in accordance with MTCA and take into consideration exposure pathways and receptors based on current and likely future uses of the Subject Property.

Because the Subject Property and surrounding area are currently developed for commercial use and will likely remain so into the foreseeable future and because the Subject Property is located within a dense urban environment and the Site qualifies for a TEE exclusion under WAC 173-340-7491(1)(i),only potential exposure pathways for human receptors have been taken into consideration in establishing the cleanup levels.

Based on current and future land uses of the Subject Property, the potential pathways for exposure to Site COCs include direct contact (i.e., dermal, ingestion, and inhalation exposures) with soil by workers during construction activities and potential future uses of groundwater.

CULs under MTCA may be established under Method A, Method B, or Method C. Under WAC 173-340-704(1), MTCA Method A CULs are appropriate for use at sites where:

- Few hazardous substances have been detected;
- The site is undergoing a routine cleanup action; and
- Numerical standards are available for applicable COCs and media of concern.

MTCA Method A CULs are generally appropriate for the Subject Property because there are a limited number of COCs detected in soil and groundwater, the current cleanup action is considered a routine cleanup action, and there are established MTCA CULs for the COCs in the affected media of concern. Additionally, for the COCs at the Subject Property the MTCA Method A, when available, and B cleanup levels are the same.

Groundwater at the Subject Property is impacted with COCs at concentration exceeding a CUL based on potential human ingestion. This exposure pathway is highly unlikely given that:

- The Subject Property is served by public utilities.
- The Department of Health restrictions on water well installation in urban settings such as the Subject Property, and
- The absence of a public water supply well within 1.0 miles of the Subject Property.

Regardless, groundwater cleanup levels have been developed in accordance with the requirements of MTCA. Those same cleanup levels were selected for the Former Thinker Toys Site which is an upgradient source of the impacts to groundwater observed on the Subject Property and for which the Subject Property represents the maximum downgradient extent.

4.1.1 Soil Cleanup Levels

The Site COCs and their associated CULs for soil at the Subject Property include the following:

- PCE – 0.05 mg/kg (Method A);
- TCE – 0.03 mg/kg (Method A);
- cis-1,2-DCE – 160 mg/kg (Method B);

- trans-1,2-DCE – 1,600 mg/kg (Method B); and
- VC – 0.670 mg/kg (Method B).

4.1.2 Groundwater Cleanup Levels

The Site COCs and their associated CULs for groundwater at the Subject Property include the following:

- PCE – 5 µg/L (Method A);
- TCE – 5 µg/L (Method A);
- cis-1,2-DCE – 16 µg/L (Method B);
- trans-1,2-DCE – 160 µg/L (Method B); and
- VC – 0.2 µg/L (Method A).

4.2 Points of Compliance

A point of compliance is that point or location on a property where the CULs must be attained in each medium of concern. The points of compliance for the Subject Property were established in accordance with WAC 173-340-740(6) for soil. The standard point of compliance for soil is all soil throughout the Subject Property.

Since the Subject Property is not the source of the COCs in groundwater, and those COCs are present solely as a result of passive migration, it is challenging for Onni to meet the standard point of compliance. Onni understands that the Schnitzer Property is currently undergoing redevelopment which will remove all soil contamination and shallow groundwater on that property down to a depth of 55 feet. This will prevent further migration of shallow groundwater across that property and onto the Subject Property.

The redevelopment of the Schnitzer Property will also limit the vertical migration of impacted groundwater as it migrates downgradient. This will be accomplished through the full removal of the shallow aquifer on that property and installation of the building foundation and floor within the aquitard/confining layer. That action will remove a source of recharge of both water and contaminants to the deeper groundwater.

It is fully expected that impacts to deeper groundwater on the Subject Property will naturally attenuate over time in the absence of a hydraulically upgradient source area. Until such time as the standard point of compliance can be demonstrated, Onni will establish a conditional point of compliance through the use of an Environmental Covenant for groundwater beneath the impacted portion of the Subject Property.

Two wells will be installed as close as practicable to the northern property line to establish conditional points of compliance where groundwater cleanup attainment will be monitored. Three wells will be installed within the Subject Property in areas where historic groundwater concentrations have shown the highest impacts. These wells will serve to demonstrate when cleanup levels have been achieved on the Subject Property boundary.

5.0 FEASIBILITY STUDY

The following presents the results of the FS.

5.1 Remedial Action Objectives

Remedial action objectives (RAOs) have been established for the Site to provide the technical basis for evaluating remedial alternatives that protect human health and the environment under the MTCA cleanup process (WAC 173-340-350). Based on the assessment of conditions at the Subject Property and the Site CULs presented in Section 4.0, the RAOs have been established as follows:

- Prevent human exposure to soil exhibiting COC concentrations exceeding applicable soil CULs identified in Section 4.0.
- Prevent direct contact exposure of impacted soils and/or groundwater to workers during construction activities.
- Prevent human exposure to groundwater as identified in Section 4.0.

The RAOs are of primary importance to the evaluation of the general response actions, technologies, process options, and cleanup action alternatives presented in this FS.

5.2 Analysis of All Known, Available, and Reasonable Technologies

Based on the physical conditions at the Subject Property, the available remedial options for the Site are limited. Typically, general response actions that are applicable to most impacted sites include the following:

- No action;
- Institutional controls;
- Containment;
- Removal;
- *Ex situ* treatment; and
- *In situ* treatment.

Potentially applicable technologies associated with these general response actions were identified and screened based on the Site COCs and affected media and take into consideration the current and future use of the Subject Property. The remedial alternatives under evaluation herein are based on the response actions and applicable technologies.

It is important to consider that the remedial action will be incorporated into redevelopment of the property and full excavation of the entire Subject Property to a depth of about 80 feet below grade. Acknowledging

that removal via excavation is a component of any remedial alternative necessarily focuses the selection of a recommended alternative.

5.3 Remedial Action Alternatives

Each of the alternatives presented in this FS will rely on the excavation and removal of soils and institutional controls including an Environmental Covenant to restrict future use of groundwater at the Subject Property. In consideration of this provision, and as clearly presented in the Disproportionate Cost Analysis (DCA; Section 5.5), the following list of RAOs were considered during development of the alternatives, including:

- Remove Site COC-contaminated soil from within the Subject Property to the final excavation elevation;
- Eliminate, mitigate, or otherwise control current and potential future human health and environmental exposure pathways, and
- Prevent re-contamination of soil and groundwater from off-Site source and migration onto the Subject Property.

TRC has selected the alternatives presented in this FS to be consistent with the provisions of WAC 173-340-360. The alternatives presented are the most appropriate, based on the Site-specific conditions, RAOs listed above, and best professional judgement considering the most beneficial land use(s) at the property. The development of the Subject Property will necessarily rely on meeting the RAOs while additionally incorporating a plan to mitigate the various risks in a manner that is consistent with the MTCA cleanup regulation and that maximizes the beneficial land uses consistent with the current zoning for this area of Bellevue.

TRC has completed this FS using a focused list of alternatives as presented below:

- Alternative 1 – PCE-Contaminated Soil Excavation and Hydraulic Control with Groundwater Treatment, and Environmental Covenant
- Alternative 2 – PCE-Contaminated Soil Excavation with Segregated Footing Drain Water Collection and Environmental Covenant
- Alternative 3 – PCE-Contaminated Soil Excavation with Segregated Footing Drain Water Collection, In-Situ Remediation of Residual Impacts to Soil and Groundwater, and Environmental Covenant

5.3.1 Alternative 1 – PCE-Contaminated Soil Excavation and Hydraulic Control with Groundwater Treatment and Environmental Covenant

Alternative 1 includes the excavation of PCE-contaminated soils during construction excavation for the subgrade parking garage and building foundation. The lateral limits of the construction excavation will be property line to property line and the depth will proceed to a final planned elevation of 80 feet above mean sea level (AMSL) or a grade depth below ground surface of between 70 and 75 feet bgs. PCE-contaminated soil has been documented in the northern portion of the Subject Property at shallow depths of between 5 and 35 feet bgs and at deeper depths between 50 and 70 feet bgs at concentrations greater than the MTCA Method A CUL (Figures 7 and 8).

It is currently estimated that approximately 17,500 tons of PCE-contaminated soil will be generated during excavation for the planned development. This estimate is based on an interpretation of lateral and vertical extent of the PCE impacts to shallow and deep zone soil within the planned construction excavation footprint. The 17,500 tons should be considered a preliminary estimate that is subject to change based on the results of supplemental soil sampling that will be conducted during pre-excavation soil sampling to support a Contained-In Determination and changes in the construction plans for the Subject Property, if any.

The planned construction excavation will require shoring on all four sides to safely allow for access and removal of the soils without damaging the adjacent property structures to the north or utility corridors and the city sidewalks along 106th Avenue NE. As shoring is installed along the northern property boundary, additional soil samples will be collected from the bottom of the auger pilings to determine the conditions at the property boundary and to reaffirm the correct disposal avenues for the piling spoils. Soils that are not impacted above Method A Cleanup Levels for Unrestricted Land Uses may be handled by non-40-hour HAZWOPER trained personnel, however once soil removal operations encroach within areas of PCE impacts, only properly trained HAZWOPER workers may excavate, load, transport or dispose of these materials.

Beginning at an approximate elevation of 5 feet bgs, as excavation work continues vertically through the impacted soils located on the northern portion of the Subject Property, crews will be segregated to ensure that any work being conducted in the vicinity of PCE impacted soils will be performed safely. Segregated, impacted soils will be direct-loaded into lined 10-cubic yard dump trucks and will be hauled directly to an approved waste disposal facility, for direct burial in their Subtitle D landfill under the provisions of the Contained-In Determination. The approximately 17,500 tons of PCE-contaminated soil from the construction excavation will be disposed of under a Contained-In Determination issued by Ecology. The complete removal of the on-property soil impacts will fully eliminate the construction worker direct contact pathway for soil.

Management of the soil removal operations will be conducted under the supervision of an environmental consultant to ensure the proper loading, transportation and disposal regulations are being followed. Soils will be transferred to the waste disposal facility under strict Land Disposal Restrictions and under proper Waste Manifests.

It is likely that PCE-contaminated soil will be left in place under this alternative, including any deeper soil impacts within the saturated zone that are encountered below the final excavation elevation of 80 feet AMSL (approximately 70 to 75 feet bgs).

5.3.1.1 Hydraulic Control and Groundwater Treatment

PCE-impacted groundwater from upgradient, off-property sources may continue to migrate onto the Subject Property following the excavation and property redevelopment. Groundwater that migrates onto the Subject Property will be hydraulically controlled at the northern and western property lines via groundwater extraction and treatment. Groundwater will be extracted from a series of de-watering wells installed along the northern and western portions of the Subject Property within the sub-grade parking structure (Figures 7 and 8). Groundwater extracted from the wells will be routed to a treatment system to be located in a utility room located within the basement of the future building. The captured groundwater will be treated through granular activated carbon (GAC) and discharged to the sanitary sewer system under a King County Industrial Wastewater (KCIW) Discharge Authorization.

Hydraulic control and treatment of groundwater migrating onto the Subject Property from contaminated upgradient sources will prevent recontamination of soil beneath the Subject Property and eliminate the potential for vapor intrusion into the subgrade parking that could result from migration of PCE-contaminated soil gas beneath the parking structure.

It is assumed that COCs in upgradient groundwater will continue to migrate onto or impact the Subject Property for at least 10 years until such time as upgradient, off-Site sources have been remediated. Therefore, the hydraulic control and groundwater treatment and discharge is assumed to be required for at least 10 years. Routine long-term monitoring, operational and maintenance costs have been factored into the Alternative 1 cost presented herein.

5.3.1.2 Environmental Covenant

Alternative 1 will require an Environmental Covenant (EC) be recorded on the title of the Subject Property for maintenance of the functionality of the hydraulic containment and groundwater treatment system over the life of its existence. The EC would also require that operation and maintenance (O&M) of the treatment system be conducted to ensure adequate operation and protection against PCE-contaminated groundwater migration onto and beneath the Subject Property. During operation of the treatment system, the EC would also require compliance groundwater monitoring be conducted to evaluate the effectiveness of the perimeter treatment system and monitor and confirm groundwater conditions beneath the Subject Property have achieved applicable the cleanup levels. The O&M and compliance monitoring procedures and schedule would be documented in a O&M Plan included as an Exhibit of the EC.

Under Alternative 1, it is possible that the groundwater treatment system could be shut down and the EC could be removed after a period of 10 years, once groundwater data from pre-treatment samples collected from the hydraulic containment wells confirm that COC concentrations in groundwater beneath the Subject Property are less than the MTCA Method A CULs, and the threat of recontamination from upgradient sources is no longer present.

5.3.1.3 Compliance Groundwater Monitoring

The EC would require compliance groundwater monitoring be conducted over a period of up to ten years to evaluate the performance of the hydraulic control and groundwater treatment system and until remediation of the upgradient PCE source progresses to completion. Compliance groundwater monitoring will continue until such time that COCs in groundwater beneath the Subject Property are below the cleanup levels at the points of compliance. The points of compliance for the Subject Property are applicable to groundwater within the property boundaries for the full vertical extent of groundwater impacts.

Compliance groundwater monitoring would require the installation of monitoring wells at accessible locations within the bottom floor of the parking structure. A total of three wells will be constructed for the purposes of long-term compliance monitoring. It is assumed two wells will be along the northern and northwesternmost property boundaries to evaluate the migration of impacted groundwater onto the Subject Property form upgradient sources. The third well will be installed at a location in the central portion of the garage structure.

Estimated costs for implementation of Alternative 1 are included in Table 3.

5.3.2 Alternative 2 – PCE-Contaminated Soil Excavation with Segregated Footing Drain Water Collection and Environmental Covenant

Alternative 2 includes the PCE-contaminated soil excavation, EC, and compliance groundwater monitoring consistent with Alternative 1.

5.3.2.1 Footing Drain Water Collection

Alternative 2 will include the construction of segregated footing drain system along a portion of the northern and western building foundation (Figures 9 and 10). The planned redevelopment requires the use of footing drains to control hydrostatic pressure on the building foundation. A portion of this footing drain system may capture PCE-contaminated water originating from upgradient, off-Site sources. Therefore, a portion of the footing drain system along the northern and western sides of the building will be segregated from the remaining portions of the footing drain to avoid placing PCE-contaminated water into the storm drain system.

The segregated footing drains will allow for the passive collection and permitted discharge of PCE-impacted groundwater directly to the sanitary sewer system in accordance with a King County Industrial Wastewater (ICIW) Discharge Authorization. The possible need to treat captured groundwater with technologies such as granular activated carbon or air sparging prior to discharge in the sanitary sewer will depend on whether PCE concentrations in the segregated footing drain water exceed KCIW's 240 microgram per liter (µg/L) PCE discharge limit. However, based on concentrations of PCE in groundwater detected in wells installed on, and immediately upgradient of the Subject Property, groundwater treatment is considered unlikely.

The footing drain system is expected to operate and discharge water to the sanitary sewer for the life of the building. Post-construction operation, maintenance, and monitoring requirements for the groundwater capture system will be summarized in an O&M Plan included as an Exhibit of the Environmental Covenant discussed in Section 5.3.2.2. Costs to segregate the footing drain piping, install dedicated equipment, and conduct permit sampling and monitoring have been addressed in the alternative costing scenarios presented in Table 4.

It is expected that at some time in the future the upgradient sources of PCE-contaminated groundwater will be remediated and groundwater quality beneath the Subject Property will improve as a result. Groundwater from the segregated portion of the footing drain system will continue to be discharged under the KCIW permit as long as necessary but may be re-routed to the storm drain system based on ongoing testing and demonstrated compliance with applicable discharge limits including total settleable solids (TSS), pH or other permit restrictions.

The segregated footing drain system and sanitary sewer discharge (with or without treatment) will be incorporated as engineering controls within the EC.

5.3.2.2 Environmental Covenant

Alternative 2 will require an EC be placed onto the title of the Subject Property to maintain the functionality of the segregated footing drain collection system over the life of its existence. The EC would require that O&M of the segregated footing drain collection system be conducted to ensure adequate protection to current or future building tenants, and to ensure compliance with the requirements of the KCIW Discharge Authorization. The EC would also require that compliance groundwater monitoring be conducted to monitor and confirm the effectiveness of the segregated footing drain system at capturing PCE-impacted groundwater and to monitor groundwater conditions beneath the Subject Property over time, until applicable the cleanup levels have been achieved. The O&M procedures, compliance monitoring plan, and schedule for those actions would be documented in the O&M Plan as an Exhibit of the EC.

Under Alternative 2, the EC could be removed after a period of 10 years, assuming that groundwater data from compliance monitoring wells and segregated footing drain discharge sampling confirms COC concentrations in groundwater are less than the MTCA Method A CULs ***and*** that the upgradient and adjacent properties have been remediated such that the migration of groundwater contamination beneath the Subject Property is no longer occurring.

5.3.2.3 Compliance Groundwater Monitoring

The EC would require compliance groundwater monitoring be conducted over a period of up to ten years to evaluate groundwater conditions beneath the Subject Property as remediation of the upgradient PCE source progresses to completion. Compliance groundwater monitoring will be done in accordance with the procedures outlined above in Section 5.3.1.3.

Estimated costs for implementation of Alternative 2 are included in Table 4.

5.3.3 Alternative 3 – PCE-Contaminated Soil Excavation with Segregated Footing Drain Water Collection, In-Situ Remediation of Residual Impacts to Soil and Groundwater, and Environmental Covenant

Alternative 3 includes the same elements as Alternative 2 with the addition of in-situ remediation of residual impacts to soil and groundwater.

5.3.3.1 In-Situ Remediation

Remediation of PCE-contaminated groundwater migrating through the Subject Property from upgradient, off-Site sources would be accomplished following redevelopment via in-situ application of Enhanced Reductive Dechlorination (ERD). ERD refers to biological treatment using microorganisms to progressively reduce the toxicity of highly chlorinated compounds, such as PCE or TCE, to non-toxic end products, like ethene. The ERD process involves adding an organic substrate such as emulsified vegetable oil (EVO) and/or sodium lactate to the subsurface to provide a primary food and energy source (i.e., electron donor) for bacteria. During anaerobic respiration, specific forms of bacteria use chlorinated compounds as an electron acceptor for their metabolic waste products. This process progressively removes the chlorine atoms from the PCE molecule in the following sequence:

PCE → TCE → cis-1,2-DCE → VC → ethene

Implementation of this technology would require installation of an injection gallery into the portion of the aquifer immediately beneath the bottom floor of the sub-grade parking structure and injecting a substrate such as EVO and/or lactate and pH buffering compounds into the subsurface. Because no data is available on microbial population within the aquifer, it may be necessary to also inject a commercial bioaugmentation culture with the substrate. The bioaugmentation would serve to “seed” the Site with the necessary bacteria, while the electron donor and acceptors would continue to facilitate biological population as long as contamination still exists above CULs. It is only necessary to maintain geochemical conditions conducive to biological growth (i.e., neutral pH, low oxidation-reduction potential [ORP], and low dissolved oxygen [DO]).

An injection gallery would be installed during construction of the bottom floor of the parking structure and would cover an approximately 250-foot long east-west trending line perpendicular to the groundwater flow direction (Figures 11 and 12). The injection gallery would be designed with appropriate screen materials and construction details to facilitate effective distribution of the substrate into the aquifer necessary to create an in-situ ERD treatment zone to effectively degrade PCE.

Based on the current groundwater conditions and estimated PCE concentrations expected at the time of construction, this approach assumes two ERD injections events would be required over a two year in-situ remediation and performance monitoring period.

Additional geochemical sampling will be required during implantation of this approach to monitor and amend the bioaugmentation program as groundwater monitoring data present new information. In addition to monitoring the groundwater plume for PCE, additional groundwater chemical parameters

helpful in assessing the effectiveness of the remedial efforts will include semiannual sampling and analysis of other geochemical indicators of anaerobic conditions such as iron, manganese, sulfur, nitrate and nitrite. Costs for those additional analyses are accounted for in the performance monitoring costs for Alternative 3.

5.3.3.2 Environmental Covenant

Alternative 3 will require an EC be placed onto the title of the Subject Property to maintain the functionality of the segregated footing drain collection system over the life of its existence. The EC would require that O&M of ERD treatment system and the segregated footing drain collection system be conducted to ensure adequate protection to current or future building tenants, and compliance with the requirements of the KCIW Discharge Authorization. During operation of the ERD treatment system, the EC would also require performance groundwater monitoring be conducted to evaluate the effectiveness of the in-situ treatment. Post-treatment compliance monitoring would also be required to confirm groundwater conditions beneath the Subject Property have achieved and maintain applicable the cleanup levels. The O&M and performance and compliance monitoring procedures and schedule would be documented in a O&M Plan as an Exhibit of the EC.

Under Alternative 3, the EC could be removed after a period of 10 years, assuming that groundwater data from performance and compliance monitoring confirms COC concentrations in groundwater are less than the MTCA Method A CULs and that the upgradient and adjacent properties have been remediated such that the migration of groundwater contamination beneath the Subject Property is no longer occurring and that a segregated footing drain system and sanitary sewer discharge is no longer required for the Subject Property.

5.3.3.3 Performance Groundwater Monitoring

Alternative 3 will require remedial performance groundwater monitoring and reporting to determine remedy effectiveness and determine if additional injection events are required. Therefore, monitoring wells will be installed both upgradient and downgradient of the linear treatment zone to monitor the concentration of COCs in groundwater migrating onto the Subject Property and following treatment via the ERD barrier. It is assumed two wells will be installed upgradient of the treatment zone and three wells downgradient of the treatment zone, at accessible locations within the bottom floor of the parking structure. It is assumed that no less than 2 years (8 quarterly events) of groundwater monitoring will be performed to evaluate the effectiveness of treatment.

5.3.3.4 Compliance Groundwater Monitoring

Following 2-years of in-situ groundwater treatment, it is likely that groundwater beneath the Subject Property will still be undergoing natural degradation for some time before all COCs are at concentrations below their cleanup levels. The presence of groundwater with COC concentration exceeding cleanup levels will be addressed through an EC. The EC would require semiannual compliance groundwater monitoring be conducted over a period of up to ten years to evaluate and track the progress of groundwater cleanup under natural conditions until such time that COCs in groundwater beneath the

Subject Property are below the cleanup levels at the points of compliance. The points of compliance for the Subject Property are applicable to groundwater within the property boundaries for the full vertical extent of groundwater impacts.

Compliance groundwater monitoring would be conducted on the same wells installed for remedial performance monitoring, as described above in Section 5.3.3.3.

Estimated costs for implementation of Alternative 3 are included in Table 5.

5.4 Evaluation Basis for Remedial Alternatives

To the extent practicable, all alternatives considered must meet the following minimum threshold criteria presented in WAC 173-360-340(2)(a). Those include:

- Protect human health and the environment;
- Comply with all cleanup regulations;
- Comply will all local, state and federal laws; and
- Provide for compliance monitoring.

Additionally, for those alternatives that meet the threshold requirements, the remedy selected shall:

- Use permanent solutions to the maximum extent practicable; and
- Provide for a reasonable restoration timeframe

5.5 Disproportionate Cost Analysis

A DCA is a cost/benefit analysis that ranks the environmental protectiveness of a selected alternative, to the maximum extent practicable. The evaluation criteria considered in this analysis are presented in WAC 173-360-340 (3)(f) and include seven criteria that are used to weigh and score the incremental benefits of any action compared to the relative incremental cost to conduct that action at a Site. Those criteria include:

- Protectiveness;
- Permanence;
- Effectiveness over the long-term;
- Management of short-term risks;
- Implementability;
- Public concerns; and
- Cost.

5.5.1 Evaluation of Remedial Alternatives

If the minimum threshold criteria are met for any alternative presented, the next step is to evaluate the protectiveness of the alternative based on the seven factors above. A scoring and ranking system is used to evaluate how well the environmental implications of the alternatives rank against each other according to those seven factors.

This section presents a summary of the evaluation and comparison of the proposed remedial alternatives for selecting the preferred cleanup action for the Site, based on the criteria contained within WAC 173-340-360 (3)(f) and (4). Each criterion also includes sub criteria as a component of the evaluation.

Based upon TRC's experience, best professional judgment, and the application of scientific principles, each alternative has been assigned a score for each criterion ranging from 1 (worst) to 5 (best). Each score is based on the perceived degree to which alternative meets the evaluation criteria. A summary of the evaluation of the proposed alternatives is provided in Table 6 and summarized in the following sections. The overall evaluation is then used to calculate the relative ranking of each alternative to the other alternatives. The rankings are based on experience with other sites and similar technologies, vendor information, and our understanding of specific Site conditions that could and would affection each of the alternatives.

For the DCA, the non-cost criteria were analyzed using weighting factors established by Ecology. The weighted values were summed, and the summed scores are compared to the estimated cost of each alternative.

5.5.1.1 Protectiveness

Overall protectiveness of human health and the environment including the degree to which existing risks are reduced, time required to reduce risk at the facility and attain cleanup standards, on and off-Site risks resulting from implementing the alternative, and improvement of the overall environmental quality.

Due to the relative overall importance that protectiveness has on human health and the environment in this "protectiveness" has been allocated 30 percent of the overall weighted scoring value in the evaluation of its success as a remedial strategy.

Alternative 3 scored the highest for protectiveness because of the addition of in-situ treatment of groundwater in addition to the segregated footing drain system that will capture PCE-contaminated groundwater migrating onto the Subject Property. Alternative 1 scored the worst for protectiveness because of the relatively long timeframe necessary to maintain and monitor for compliance the groundwater hydraulic containment and treatment system and the high risks of that system being fully effective without having completed pilot testing without the addition of a segregated footing drain system. Alternative 2 scored in the middle, just slightly below Alternative 3.

5.5.1.2 Permanence

Permanence refers to the degree to which a cleanup action permanently reduces the toxicity, mobility or volume of hazardous substances, the adequacy to which the alternative reduces or eliminate releases or sources of releases, the degree of irreversibility of the waste treatment process, and the characteristic and quantity of generated treatment wastes.

Permanence was given a scored weighting of 20 percent of the overall evaluation.

Alternatives 1, 2, and 3 scored the same for permanence because of the complete removal of PCE-contaminated soils during the construction excavation. Where the alternatives differ is in how they address risks associated with continued migration of PCE-contaminated groundwater onto the Subject Property from upgradient, off-Site sources.

5.5.1.3 Effectiveness Over the Long Term

Long-term effectiveness refers to:

- The degree of certainty that the alternative would be successful;
- The reliability of the alternative during the period of time hazardous substances are expected to remain on-Site at concentrations that exceed CULs;
- The magnitude of the residual risk with the alternative in place; and
- The effectiveness of controls required to manage treatment residues or remaining wastes.

Long-term effectiveness was given a scored weighting of 20 percent of the overall evaluation.

The long-term effectiveness of the complete excavation of on-property PCE-contaminated soils during the construction excavation would ultimately be effective in removing hazardous substances on-Site to concentrations below their respective CULs. The risks would then be associated continued migration of PCE-contaminated groundwater onto the Subject Property from upgradient, off-Site sources. How the contaminated groundwater risk is managed long-term is a component of all three alternatives.

Alternative 1 addresses the groundwater migration and vapor intrusion risk using a hydraulic capture and treatment system along the northern, upgradient property line. The hydraulic capture system would prevent migration of PCE-contaminated groundwater onto the Subject Property and, if designed properly and operated effectively, would eliminate the potential for vapor intrusion into the sub-grade parking structure installed below the depth of groundwater. While hydraulic capture and treatment is a fully established technology that can be effective over the long term, it requires successful design, implementation, favorable geological conditions and extensive operational and maintenance to continually maintain its effectiveness. If pilot testing is not completed prior to installation to determine the appropriate extraction well spacing and construction specifications, its effectiveness may be limited without requiring the addition of more wells that would be impractical and likely infeasible to install

following completion of construction. System performance due to lack of prior testing and proper design could increase restoration timeframes, assuming that upgradient sources have not been fully remediated. As such, Alternative 1 scored the lowest for long-term effectiveness.

Alternative 3 scored the highest for long-term effectiveness. The addition of in-situ treatment of groundwater beneath the Subject Property coupled with a segregated footing drain system to capture PCE-contaminated groundwater migrating onto the Subject Property from upgradient, off-Site sources would address potential impacts to groundwater beneath the Subject Property and address potential vapor intrusion risks. However, PCE concentrations in groundwater beneath the Subject Property are expected to be relatively low due to ongoing and planned remediation of PCE sources upgradient of the Subject Property so vapor intrusion risks are not anticipated. The addition of in-situ treatment under Alternative 3 will increase the long-term effectiveness by treating groundwater contamination beneath the Subject Property that would have by-passed the segregated footing drain system prior to installation.

Alternative 2 scored in the middle, just slightly below Alternative 3.

5.5.1.4 Management of Short-Term Risks

The risk to human health and the environment associated with the alternative during construction and implementation, and the effectiveness of measures that will be taken to manage such risks.

The Management of Short-Term Risks was given a scored weighting of 10 percent of the overall evaluation.

The short-term risks would be highest under Alternative 3, which accordingly scored the lowest (along with Alternative 1) for this criterion. There are significant complications with installing and operating an in-situ injection system or groundwater extraction and treatment system in a sub-grade parking structure with very limited vertical clearance (if not installed concurrently with garage construction). Both systems will require the installation of wells, injection galleries, piping, electrical connections and other tasks that will bring their own short-term risks and significant complications during construction.

Alternative 3 scored slightly below Alternative 1, due in part to the multiple rounds of reagent injections that would be required and would have to be completed within an operational sub-grade parking structure.

Alternative 2 scored the highest for management of short-term risks due to fact that the segregated footing drain system installation would be implemented during property redevelopment, and therefore seamlessly included in the design and construction of the structure(s). The installation and operation of the segregated footing drain system would not generate a significant impact during or after construction.

5.5.1.5 Technical and Administrative Implementability

These criteria involve the ability of the technology to be implemented including consideration of whether the alternative is technically possible, availability of necessary off-Site facilities, services and materials, administrative and regulatory requirements, scheduling, size, complexity, monitoring requirements,

access for construction operations and monitoring, and integration with existing facility operations and other current or potential remedial actions.

Technical and Administrative Implementability was given a scored weighting of 10 percent of the overall evaluation.

Alternatives 1 and 3 scored equally in this category and scored low. Alternatives 1 and 3 both bring considerable technical challenges during construction of treatment system infrastructure in the bottom floor of a sub-grade parking structure with very limited vertical clearance. If the treatment system components under Alternatives 1 and 3 cannot be completed concurrently with parking structure construction, the technical implementability will be significantly decreased or possibly infeasible. Furthermore, pilot testing would be necessary to successfully design a hydraulic containment system or in-situ treatment program and completing such testing could impact or delay the redevelopment construction schedule.

Alternative 2 scored the highest in this criterion due to its ease of integration with the redevelopment of the Subject Property. Installation of the segregated footing drain system during redevelopment will require little additional technical concerns during implementation beyond some slight modifications to the overall building footing drain water collection system to segregated water collected along the northern perimeter for treatment and discharge.

5.5.1.6 Consideration of Public Concerns

Whether the community has concerns regarding the alternative and, if so, the extent to which the alternative addresses those concerns. This process includes concerns from individuals, community groups, local governments, tribes, federal and state agencies, or any other organization that may have an interest in or knowledge of the Site.

Consideration of Public Concerns was given a scored weighting of 10 percent of the overall evaluation.

All three Alternatives are included excavation of PCE-contaminated soil as part of a planned construction excavation and redevelopment project that would have its own public concerns that would not necessarily be focused on the remediation that would be completed concurrently and following the Subject Property redevelopment. The other components of each Alternative would be fully integrated into the Subject Property redevelopment and as such would not be likely to cause disruptions to the public or otherwise generate any anticipated public concerns. Under Alternatives 1 and 3, construction of treatment system infrastructure would be hidden from public view in the bottom floor of the sub-grade parking structure. Implementation of these Alternatives would have little to no impact to normal construction schedules and therefore, few public concerns.

5.5.1.7 Cost

Cost is not one of the evaluation criteria. However, along with the scores presented above, cost is a necessary component of a DCA as defined in WAC 173-340-360(3)(e). The performance of a DCA is

required when environmental covenants are a component of the remedial action. Cost is defined in WAC 173-340-360(3)(f)(iii) as:

> *The cost to implement the alternative, including the cost of construction, the net present value of any long-term costs, and agency oversight costs that are cost recoverable. Long-term costs include operation and maintenance costs, monitoring costs, equipment replacement costs, and the cost of maintaining institutional controls. Cost estimates for treatment technologies shall describe pretreatment, analytical, labor, and waste management costs. The design life of the cleanup action shall be estimated, and the cost of replacement or repair of major elements shall be included in the cost estimate*.

Order-of-magnitude remediation costs (i.e., -30 percent to +50 percent) were estimated for each of the remedial alternatives based on the descriptions and associated assumptions presented above, and without engineering design or contractor bidding.

The order-of-magnitude remedial costs are based on typical costs for Washington State and the current knowledge of the Site. All costs are assumed to be for newly purchased equipment and not refurbished or used. Estimated costs are based on current dollar values. Tables 3 through 5 summarize the order-of-magnitude costs for Alternatives 1 through 3, respectively. The following table summarizes those estimated costs.

Table 7
Remedial Alternatives Cost Summary

Remedial Alternative	Order-of-Magnitude Remediation Cost Estimate
Alternative 1 – PCE-Contaminated Soil Excavation, Hydraulic Control and Groundwater Treatment, and EC	$ 2,823,000
Alternative 2 - PCE-Contaminated Soil Excavation with Footing Drain Water Collection and EC	$ 2,467,372
Alternative 3 - PCE-Contaminated Soil Excavation with Footing Drain Water Collection, In-Situ Remediation, and EC	$ 2,897,882

These costs are for comparison purposes only. Actual implementation costs will vary from those provided in this FS. These estimated costs incorporate a variety of necessary assumptions and the validity of those assumptions cannot be fully known at this time. In particular, the level of effort to incorporate treatment system infrastructure installations covered under Alternatives 1 and 3 and their impact on the construction schedule cannot be anticipated.

Prior to implementation of Alternative 1, it is likely that a pilot-test will be necessary to support the engineering design of the hydraulic containment system. Similarly, implementation of Alternative 3 is likely to include bench-scale testing of the selected reagent using Site-specific soil and groundwater that

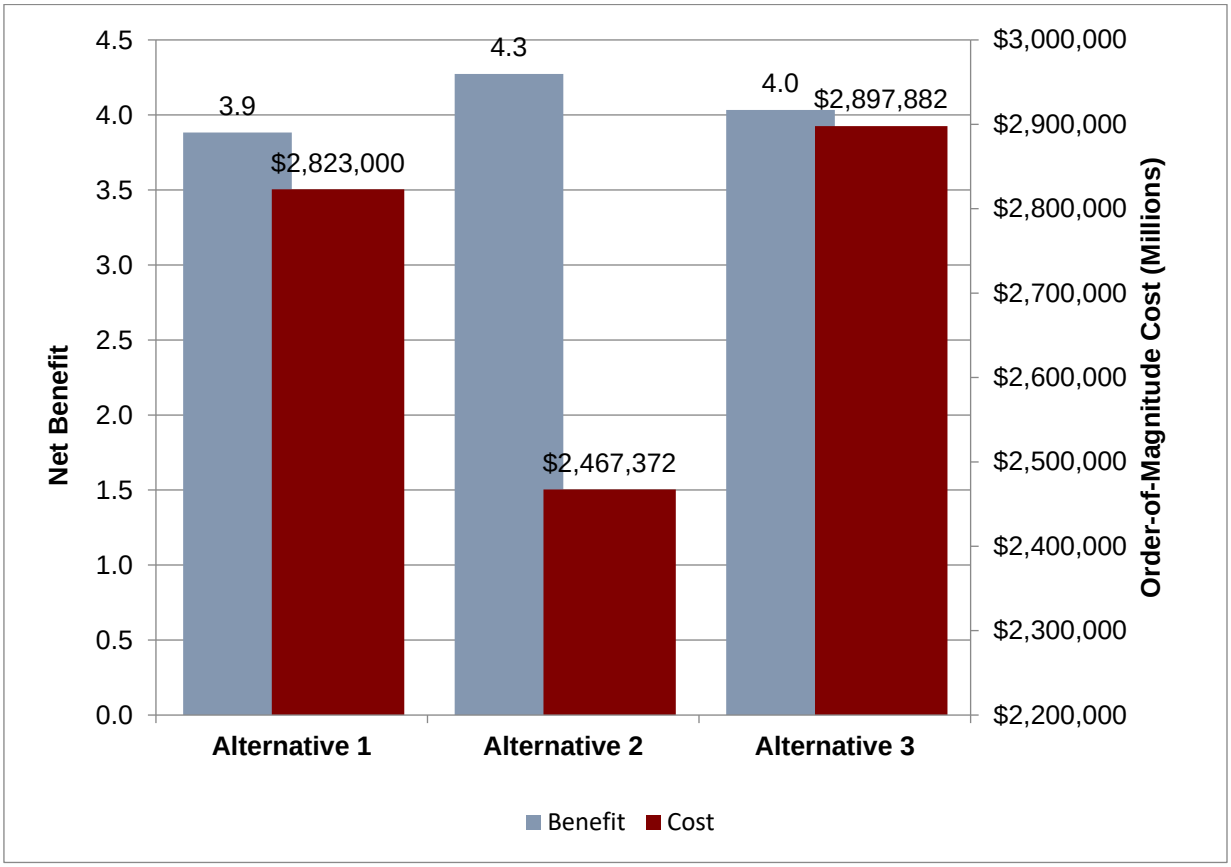
would need to be collected prior to completion of a CAP and Engineering Design Report (EDR), which will require approval by Ecology. Only following acceptance of the components of the CAP by Ecology, will it be possible to provide a detailed estimate of actual implementation costs. The estimates provided use reasonable assumptions and the resulting estimates are appropriate for technology evaluation purposes.

The purpose of the DCA is to evaluate whether the costs associated with any particular cleanup alternative are disproportionate to the environmental benefit derived from that alternative. Under WAC 173-340-360(3)(e)(i), costs are disproportionate to benefits if:

> *…the incremental costs of the alternative over that of a lower cost alternative exceed the incremental degree of benefits achieved by the alternative over that of the other lower cost alternative.*

The DCA was performed quantitatively using the judged scoring of the non-cost criteria as the net benefit versus the estimated costs presented above. The raw scores from six non-cost criteria in Table 8 are weighted using the weighting factors established by Ecology. Restoration timeframe is not used in this evaluation due to the fact that it is a Threshold Criteria and all alternatives must provide for a reasonable restoration time frame. This approach is consistent with the Ecology-prescribed approach and currently understood guidance. Those weighted raw scores are then summed to provide the scores summarized in Table 6.

The chart below presents the DCA using the estimated order-of-magnitude costs and quantitative net benefit values.



5.5.2 Results of DCA

This FS evaluation indicates that Alternative 2 - PCE-Contaminated Soil Excavation with Footing Drain Water Collection and Environmental Covenant - best meets the MTCA criteria for selection of a remedial action alternative at the Site. This approach complies with applicable regulations, is protective of human health and the environment, is reasonably practicable, and can be readily implemented at the Site with moderate short-term risks and with no public concern.

5.6 FS Recommendations

TRC recommends Alternative 2, which will include PCE-contaminated soil excavation conducted during the redevelopment of the Subject Property. Alternative 2 will include the removal of practicably-accessible soils within the construction excavation to less than remedial direct-contact soil CULs and the installation of a segregated footing drain water collection system to further eliminate the migration of PCE-contaminated groundwater from off-Site, upgradient sources and the potential threat of vapor intrusion into the sub-grade parking structure. The segregated footing drain water collection system will require the components of work described in this document.

6.0 CLEANUP ACTION PLAN

This section presents rationale for selecting the cleanup action and an overview of the selected cleanup action. Section 6.0 presents the primary elements and sequence of the cleanup action.

6.1 Alternatives Analysis and Cleanup Action Selection Rationale

Based on the evaluation of remedial alternatives, the selected cleanup action consists of the following components:

- Excavation and off-Site disposal of PCE-contaminated soil encountered throughout the redevelopment excavation at a permitted facility;
- Capture of contaminated groundwater with subsurface perimeter wall drains and treatment (as necessary) followed by permitted water discharge; and
- Institutional controls in the form of an EC that formalizes the requirement for the engineering controls (perimeter groundwater capture), including maintenance requirements for engineered controls, groundwater monitoring, restrictions on groundwater use and other standard provisions of the current EC template provided by Ecology.

This cleanup action was selected because it meets MTCA requirements for a permanent, protective cleanup action and can be cost effectively implemented concurrently with redevelopment of the Subject Property. Components of the selected cleanup action alternative have been implemented at other similar sites and are technically feasible within the redevelopment framework. Reasonably accessible soil with contaminant concentrations that exceed MTCA cleanup levels will be removed from the Subject Property for disposal. Contaminated soil and groundwater on the Subject Property beneath the completed building will remain in place and soil and groundwater contamination beyond the property boundaries to the north, in the upgradient direction, will remain in place or be remediated as part of a similar property redevelopment by Schnitzer currently underway. The existing soil and groundwater contamination present at the Subject Property is solely the result of passive migration from upgradient contaminated properties (i.e., Former Thinker Toys Site). Onni is an affected property owner, not a PLP for the source property. A perimeter footing drain system will be installed to capture PCE impacted groundwater migrating to the Subject Property. That water will be treated (as necessary) and disposed to the sanitary sewer. Through these actions, Onni retains its protections under the “Plume Clause” of MTCA [70.105D RCW (22)(b)(iii)] and cannot be considered a PLP for the Former Thinker Toys Site, or a contributor to exacerbated conditions.

The proposed cleanup action does not result in a significant amount of additional short-term risk beyond what is typical for a large construction project in an urban setting. Except for long-term O&M of the passive groundwater management system and post-cleanup compliance groundwater monitoring, the cleanup action is expected to be completed within a reasonable restoration timeframe of 1 to 2 years after the proposed redevelopment work begins.

The proposed cleanup action is protective of all current and future potential exposure pathways at the Subject Property and fully complies with all requirements of MTCA and its implementing regulations.

6.2 Description of Selected Cleanup Action

The cleanup action will consist of the activities presented in the following subsections. Additional details regarding cleanup action implementation and sequencing are presented in Section 8.0.

6.2.1 Soil Excavation

Based on Onni's development plans, soil will be excavated and removed from the Subject Property during excavation for the building foundation and below-grade parking garage. The redevelopment excavation will be from property line to property line on all four sides and will extend to an elevation of about 80 feet AMSL. The redevelopment includes six floors of underground parking and commercial uses at ground level. Shoring will be installed at the Subject Property boundaries to allow excavation and construction of the building and subgrade parking structure. As noted, construction excavation is planned to extend from property line to property line.

It is anticipated the PCE-contaminated soil excavation will be encountered along the northern edge of the construction excavation at two separate depths extending to an elevation of about 80 feet AMSL, or a corresponding depth of approximately 65 to 70 feet below grade. Removal of the PCE-contaminated soil within the footprint of the overall construction excavation will be conducted in two separate targeted excavations: one shallow and one deep, and both located within the north-central portion of the Subject Property and the overall construction excavation. The estimated volume of shallow and deep PCE-contaminated soil based on the current on-Site dataset is 2,500 and 10,000 bank cubic yards, respectively. The final lateral limits and estimated volumes of the PCE-contaminated soil excavations will be further refined during post-demo soil characterization for the Contained-In Determination, described below in Section 8.1.4. However, based on current data the shallow soil excavation covers a conservative 50-by-60-foot area with a planned depth range of between 5 and 35 feet below grade. The deep PCE-contaminated soil excavation covers a conservative 150- by 125-foot area with a planned depth range of between 50 and 70 feet below grade. The approximate locations and depths of the two targeted excavations are shown on Figures 9 and 10.

The north-adjacent Schnitzer Property is currently undergoing redevelopment. The Ecology-accepted plan for that property is to redevelop their property in a similar manner as the Onni redevelopment by removing contaminated soils on their property to accommodate new building construction. Considering the construction timelines for the two projects, the north-adjacent property will have completed the soil removal and building construction at the south end of their property (north end of the Onni property) by the time Onni breaks ground. The north-adjacent building plans show their intent to construct the building to a base elevation of 88 feet AMSL. It is expected that the north-adjacent redevelopment efforts will remove their soils along the property line and will limit the amount of groundwater recovery and mitigation efforts that Onni will need to address during its construction.

Contaminated soil removed during the redevelopment will be transported to a permitted disposal facility, as discussed in Section 8.2.1, and in accordance with an Environmental Materials Handling Plan (EMH Plan) to be prepared under separate cover and submitted to Ecology for review and approval under the VCP. The EMH Plan will be completed using the information gathered during the Contained-In soil investigation. Pre-determined and characterized soil units will be demarcated prior to construction and shall be identified in the field when the contractors intend to work in these areas. The remedial excavation portion of the redevelopment excavation will include performance and compliance monitoring at the limits of the remedial excavation to demonstrate compliance with cleanup levels or to document COC concentrations that may remain beneath the bottom of the parking structure or beyond the property boundary to the north. TRC will oversee the excavation, soil loading and disposal operations and will also collect performance samples during the work to demonstrate the removal of the contaminated materials.

6.2.2 Footing Drain / Groundwater Capture System

The building construction includes the installation of a perimeter footing drain to control hydrostatic pressure on the building walls. The bottom 5 to 10 feet of the parking structure may be below the top of the local water table aquifer. Local groundwater conditions indicate that this shallow aquifer is of generally low yield and seasonally varies. Additionally, the north-adjacent building construction will eliminate a significant volume of water that currently migrates onto the Subject Property, further decreasing the volume that will be captured. It is estimated that a footing drain for the entire perimeter of the building may yield up to 10 gallons per minute.

Impacted groundwater from upgradient source(s) is known to only affect a small portion of the northern area of the Subject Property. To provide a reasonable factor of safety, the footing drain system for a portion of the northern and western corner of the Subject Property will be segregated from the remaining footing drain to capture and relocate PCE-impacted groundwater. This will require that segregated footing drains be installed along the western half of the northern wall of the building and a fifth of the northern portions of the western wall of the building.

The approximate extent of the perimeter wall drains that will capture the contaminated groundwater is depicted on Figure 9. The location of the contaminated footing-drain system is based on existing chemical data that defines the extent of PCE-contaminated soil and groundwater along the northern edge of the Subject Property. The lateral extent of the segregated groundwater footing drain is subject to revision based on chemical analytical results for soil characterization/confirmation samples collected during construction. The subsurface footing drains will operate for the life of the building.

Groundwater captured from this segregated portion of the footing drain will be discharged to the sanitary sewer under a Minor Discharge Authorization from King County Industrial Waste (KCIW) and the City of Bellevue, subject to approval by KCIW and performance of routine sampling and self-reporting.

The KCIW PCE discharge limit is 240 µg/L. If water samples collected from the segregated footing drain system exceed the PCE discharge limit during construction, water treatment will be required prior to discharge to the sanitary sewer using technologies such as granular activated carbon. It is not currently anticipated based on available groundwater data that such treatment will be necessary. Regardless, the

building will have design details that allow for the installation, operation, and maintenance of appropriate treatment equipment. Design details for the segregated footing drain system will be presented in the project plans and specifications package.

It is expected that the source properties will at some point in the future be remediated. Such remediation would eventually allow the water captured by the perimeter footing drain to be discharged to the storm drain system as is normal for footing drains. Such discharges will only be made after routine sampling demonstrates on-going compliance with freshwater surface water discharge limits established for PCE at that time. The current freshwater surface water discharge limit for PCE is 0.69 µg/L (Clean Water Act). Until such limits can be demonstrated, the captured water will continue to be discharged to the sanitary sewer under the minor discharge authorization by KCIW.

6.2.3 Vapor Barrier Contingency

As noted above groundwater is not currently known to be present at a concentration that exceeds an $SL_{gw.}$ Therefore, a vapor intrusion vapor barrier is not currently anticipated. If additional soil or groundwater data from the Contained-In Determination investigation or from the bottom of excavation performance sampling indicate that a vapor barrier is required, one will be installed.

If required, a vapor barrier may be installed on the subsurface perimeter walls and the concrete slab at the base of the parking structure. The intent of the vapor barrier is to minimize potential vapor intrusion into the underground parking structure.

If required, the vapor barrier will be designed to address the actual area of residual impact, with an approximately 50-foot lateral buffer as a factor of safety. The vapor barrier design will be discussed with the EVCP project manager prior to installation.

A vapor barrier would be constructed as a Class I vapor retarder with a permeance of less than 0.1 perms. Seams and penetrations will be appropriately sealed. The material will be specified by the engineer as being suitable for the concentrations of chlorinated solvents that have been identified at the Subject Property. Design details for the vapor barrier (if required) will be presented in a supplemental plans and specifications package. The final cleanup action report will include the final specifications, material cut-sheets and testing results from the installation inspection report.

6.2.4 Institutional Controls

Institutional controls will be used as part of the cleanup action to address contaminated soil and groundwater that are expected to remain at some locations on the Subject Property. Those institutional controls will consist of an EC that incorporates and formalizes the installation and O&M of the engineering controls, and other general requirements of an EC such as notifications to Ecology for change in ownership and land use and restrictions on groundwater use at the property, among others.

The institutional controls identified in the EC will identify the locations of the groundwater plume on a map and the identified conditions that apply to that specific area, such as no exposure to groundwater, or no pumping of the groundwater without Ecology notification.

7.0 CLEANUP ACTION OBJECTIVES

The overarching cleanup action objective is to complete a cleanup action, in conjunction with development of the three planned high-rise commercial buildings, that is compliant with MTCA and protective of human health and the environment. The Cleanup Action described above is fully compliant with MTCA and is protective of all current or potential future exposure pathways at the Subject Property. It is also readily implemented during the planned redevelopment action.

The following Property-specific cleanup action objectives were developed to address contamination in the various media of concern during the proposed Subject Property redevelopment:

- Avoid generating Dangerous Waste as defined in WAC 173-303 by obtaining a Contained-In Determination from Ecology for soil containing low concentrations of PCE.
- Remove all accessible contaminated soil throughout the Site, within the boundaries of Subject Property construction excavation, and achieve cleanup levels for unrestricted land use.
- Properly handle and manage PCE-impacted groundwater that may enter the construction excavation. Depending upon the volumes encountered this may either involve off-property disposal or on-property treatment and discharge to the sanitary sewer under a KCIW discharge authorization.
- Implement engineered controls to collect, and if necessary treat, PCE-impacted groundwater that encounters the segregated footing drains of the planned development. The wall drain system, including the portion that will also act as the contaminated groundwater capture system, will be designed to function for the life of the building.
- Develop and implement engineered controls as needed at the Subject Property to mitigate risk of vapor intrusion into the proposed building and underground parking structure.
- Collect appropriate performance and compliance soil samples from the limits of the remedial excavation to demonstrate the success of the remedial action and to characterize soil conditions at the final limits of excavation.
- Appropriately document all on-property activities using the current standard of care and in a manner consistent with the requirements of Ecology.
- Obtain a Property-specific NFA determination from Ecology.

8.0 CLEANUP ACTION IMPLEMENTATION AND SEQUENCE

This section presents the primary elements and sequence of the cleanup action that will be performed concurrently with redevelopment of the Subject Property.

8.1 Pre-Construction Actions

The following actions will be performed before construction activities begin on the Subject Property.

8.1.1 Monitoring Well Decommissioning

Monitoring wells located within the footprint of the planned redevelopment excavation will be decommissioned in accordance with Ecology requirements (WAC 173-160-460) before installation of shoring or soil excavation. The following monitoring wells are within the planned construction excavation footprint:

- Shallow monitoring wells URS-MW-5, URS-MW-6, URS-MW-7, and URS-MW-7D & 7I
- Deep Monitoring Wells MW17-01, MW17-02, and MW17-03

In addition, several wells located outside of, but close to, the northern Subject Property boundary (URS-MW-8, URS-MW-4, and B4/MW-4) that were installed by SRO for investigation of the northern adjacent Schnitzer Property, may require decommissioning to accommodate installation of soil nails or other shoring elements. The need for decommissioning these off-Property monitoring wells will be evaluated once design/construction details are available.

Monitoring well groundwater depth information is presented in Table 2 and well construction details are included in Attachment A.

Implementation of the remedial action will include a component of compliance monitoring for groundwater. Some of the compliance wells would be installed on the Subject Property during construction of the sub-grade parking structure. However, some of the wells will necessarily be located off-Property in areas neither owned nor controlled by Onni. Onni will negotiate proposed monitoring well locations and sampling frequencies with Ecology and will work in good faith to gain access to those locations. Onni can make no representations whether it will ultimately be granted access to such off-property locations for the purposes of monitoring well installation and routine sampling.

8.1.2 Building Demolition

The buildings and improvements located on the Subject Property will be demolished and removed before shoring installation and construction excavation begins. Environmental evaluations of the building materials and demolition procedures are expected to be within the normal range for such procedures and are not included in the scope of this document.

8.1.3 Post-Demo Soil Characterization

Additional characterization is necessary to evaluate soil conditions at locations previously inaccessible and to appropriately plan the remedial excavation and support the request for a Contained-In Determination. A total of eight soil borings will be advanced to a depth of about 80 feet at appropriate locations within the footprint of the planned construction excavation but focused on areas where PCE impacts to shallow and deep soil have been identified or expected. During drilling at each location soil samples will be collected at 5-foot vertical intervals and screened for the presence of volatile compounds using a photoionization detector (PID) and field methods such visual and olfactory inspection. At total of six soil samples will be collected from each of the eight borings plus duplicate and quality assurance samples (i.e., 53 total).

Samples will be analyzed for halogenated VOCs (hVOCs) using U.S. Environmental Protection Agency (EPA) Method 8260C under standard turnaround times.

8.1.4 Contained-In Determination Request

A Contained-In Determination will be requested from Ecology to authorize disposal of low level PCE-impacted soil excavated at the Subject Property at a Sub-title D landfill. A Contained-In Determination is expected to be issued by Ecology for the cleanup because the highest concentrations of PCE detected in soil at the Subject Property do not warrant management as a Dangerous Waste. Similar determination has been provided for the Schnitzer Property and other similar remedial actions within the downtown Bellevue core.

The Contained-In Determination will have specific requirements for contaminated soil handling and disposal such as being placed in lined trucks and direct transportation and disposal at the approved facility. The Contained-In Determination will specifically exclude off-loading and reloading of the soils, which must arrive at the disposal facility in the containers in which they were originally placed. This typically requires the use of “roll-off” bins or other similar devices. The Contained-In Determination will also be limited to a specified volume of contaminated soil. If that volume may be exceeded, it is necessary to acquire pre-approval for the additional volumes. Failure to acquire pre-approval before disposal can (and has) resulted in substantial fines from Ecology.

8.2 Cleanup Actions During Construction

Cleanup actions to be implemented during construction include excavation and off-Site disposal of soil containing VOCs and construction of a segregated perimeter footing drain system on a portion of the northern and western building foundations.

8.2.1 Soil Excavation and Off-Site Disposal

Contaminated soil excavation and handling will take place during construction excavation for the subgrade parking garage and building foundation. Soil containing PCE will be excavated from the Subject

Property and disposed at a permitted facility. It is currently estimated that approximately 17,500 tons of PCE-contaminated soil will be generated during excavation for the planned development; 3,500 tons from the shallow soil impacts and 14,000 tons from the deeper soil impacts. This estimate is based on chemical analytical results from previous environmental studies, interpretation of the lateral/vertical extent of the PCE plume and the planned redevelopment excavation. The 17,500 tons should be considered a preliminary estimate that is subject to significant change based on the results of supplemental soil sampling that will be conducted in support of the Contained-In Determination following building demolition and prior to beginning the construction excavation.

8.2.1.1 General Soil Excavation Components

The following general soil excavation components will be implemented during construction:

- Implementation of erosion control and construction safety/security measures consistent with redevelopment permitting requirements.

- Shoring to facilitate the planned construction excavation. Current plans indicated that the building walls and shoring will incorporate vertical shoring elements and soil nails. This will allow unlimited access to PCE-impacted soil within the lateral limits of the Subject Property and the vertical limits of the construction excavation.

- Soil sampling and analysis beginning at approximately 5 feet bgs in the north-central portion of the Subject Property to refine the shallow PCE-contaminated soil segregation approach as discussed in Section 8.2.1.2. Soil sampling during excavation will be guided by an approximately 20 feet by 20 feet sampling grid for each 5- to 6-foot vertical excavation 'lift' to maximum depths of approximately 80 feet bgs. Dimensions of the grid that will guide excavation and sampling, and the vertical lift thickness, may be revised based on input from the Developer's contractors; final grid cell dimensions will be identified in the EMH Plan.

- Soil sampling and analysis from the lateral limits of shallow and deep targeted excavations will be used to document attainment of cleanup levels and complete removal of soil disposed of under the Contained-In Determination. If cleanup levels are not attained, additional excavation and confirmation sampling will be conducted until cleanup levels have been achieved. Cleanup levels will necessarily be attained throughout the lateral limits of the Subject Property because all soil will be removed from property line to property line as part of the construction excavation. If contamination extends to the property boundary, those impacts will be clearly documented through sampling and analysis. Sidewall soil samples will be collected at approximate frequency of every 20 feet horizontally and every 5 to 6 feet vertically, starting at approximately 15 feet bgs. Each soil sample will be representative of about 100 to 120 square feet of excavation sidewall.

- Soil sampling and analysis from the final lateral and vertical limits of the remedial excavation. If PCE remains present at detectable concentrations at the vertical limits (bottom) of the construction excavation samples will be collected on the same grid spacing used for

shallower soils. This will reliably establish soil conditions at the vertical limits of excavation and what will be present beneath the bottom of the completed structure.

- PCE has not been detected in shallow soil on the Subject Property. However, based on detections at 17 and 30 feet bgs in boring URS-MW-4 on the north adjacent Schnitzer Property, it is anticipated that PCE-impacts to shallow soil extend onto the Subject Property. The estimated lateral and vertical extent of shallow PCE-impacted soil is shown on Figures 3 and 4.

- PCE has been detected in deep soil on the Subject Property at depths ranging from 60 to 65 feet bgs in borings URS-SB-16, TH17-02, and URS-SB-19. The estimated lateral and vertical extent of shallow PCE-impacted soil is shown on Figures 3 and 4.

- Excavation of soil below 5 feet bgs within the redevelopment area to maximum depths equal to elevation 80 feet AMSL (based on current project design), and segregation of PCE-contaminated soil and clean soil based on existing chemical data and supplemental chemical data that characterize the soil in the excavation grid cells.

- Temporary construction dewatering of the shallow perched zone (if present) may be performed below depths of about 20 feet bgs to reduce groundwater seepage from the excavation wall face and facilitate shoring installation and soil excavation. If temporary dewatering of perched water is needed, it is anticipated that vacuum well points installed in the shoring wall will be used. Procedures for managing and discharging groundwater during construction that may be contaminated with PCE will be described in the EMH Plan.

- Transportation of excavated contaminated soil and disposal of the soil at one or more off-Property, permitted facilities. Soil management requirements for PCE-contaminated soil will be included in the Contained-In Determination letter from Ecology and detailed in the EMH Plan.

- Transportation of excavated clean soil (soil with no detected concentrations of VOCs at or above laboratory reporting limits) for disposal at off-Property soil receiving facilities to be agreed upon by Onni. Reporting limits of 0.02 mg/kg will be specified for PCE soil characterization analyses. Additional testing requirements may also be imposed by the receiving facility.

- Management and permitted discharge of stormwater and groundwater during excavation and construction activities.

- Collection and analysis of confirmation soil samples during excavation to document soil conditions at the lateral and vertical limits (sidewalls and base) of the excavation at the Subject Property. Lateral confirmation samples will be collected at the limits of remedial excavations at depths where contamination was identified by previous environmental studies or identified during construction.

8.2.1.2 PCE-Contaminated Soil Excavation

Based on existing data and pending additional characterization of PCE-contaminated soil during the pre-excavation soil investigation, excavation of PCE-contaminated soil is anticipated to start at approximately 5 feet bgs (elevation 145 AMSL) at the northernmost property line in the vicinity of off-Site well URS-MW-4, and at work southward on the Subject Property. Additional soil sampling will be conducted during excavation in the upper 25 feet bgs because shallow PCE data do not exist in this area. As excavation for shoring installation proceeds in approximate 5- to 6-foot lifts, soil characterized as containing PCE will be kept segregated from soil characterized as clean. For the purposes of this cleanup, soil excavation cells that are characterized by samples that do not contain PCE at concentrations equal to or above the selected laboratory reporting limit (0.02 mg/kg) will be considered clean. The majority of the PCE-contaminated soil is anticipated in the northern portion of the Subject Property (Figure 3) at shallow depths of approximately 5 to 35 feet bgs and deeper depths of approximately 50 to 70 feet bgs (Figure 4) within the construction excavation or at approximate elevations of 145 to 80 AMSL.

Soil samples for disposal characterization will be obtained using an approximately 20 feet by 20 feet grid before excavating each vertical lift, in accordance with sampling procedures to be presented in the EMH Plan. The target sampling depth will be two to three feet below the grid surface, or at about the physical center of the grid. The locations of soil disposal characterization samples will consider existing chemical data and visual observations of soil conditions encountered during excavation. If existing soil analytical data are available within a grid cell, those data will be used to classify soil in that cell as unimpacted or contaminated, and additional in-place soil characterization samples will not be collected. Grid cells that contain sample locations with both contaminated and clean chemical analytical results will be designated as contaminated for the purposes of soil segregation and disposal.

Before excavating each vertical lift, the environmental consultant will mark grid cells where PCE-contaminated soil has been designated using methods such as stakes and survey tape and/or spray painting the ground surface. PCE-contaminated grid cells will be excavated first in each lift to avoid cross-contamination of clean soil. The contaminated soil will be trucked directly to a Subtitle D landfill or placed in steel containers that will be trucked to a local intermodal facility for transport by rail to a Subtitle D landfill. In any event, the soil handling and transportation procedures will meet the requirements of the Contained-In Determination.

In addition to excavated soil, drill cuttings generated below a depth of approximately 5 feet during installation of vertical shoring elements and soil nails along the northern property line in the PCE-contaminated area shown on Figure 3 will be designated as PCE-contaminated and require segregation, management, and permitted disposal at a Subtitle D landfill under the Contained-In Determination.

The remedial excavation will not extend beyond the limits of the construction excavation. Because PCE has migrated to the Subject Property from an upgradient source property, PCE-contaminated soil and perched groundwater are expected to remain in place at some locations on other parcels and potentially in right-of-way immediately adjacent to the Subject Property. Based on the preliminary development plans, it is likely that contaminated soil will remain at the vertical limits (bottom) of the excavation in limited areas of the Subject Property. Confirmation sampling will be completed at the base and sidewalls of the remedial excavations to document post- cleanup soil conditions. As discussed in sections 8.2.1.1, lateral

confirmation soil samples will be collected at depths where PCE-contaminated soil has been identified previously or during construction. Vertical confirmation samples will be collected directly beneath areas where PCE-contaminated soil identified prior to and during remedial excavation has been removed.

8.2.1.3 PCE-Contaminated Water from Excavation

Water removed from the Subject Property during construction that may contain PCE will be contained in on-Site tanks for testing. It is anticipated that this water will be discharged directly to the sanitary sewer in accordance with a KCIW Discharge Authorization. If water samples collected from the storage tanks during construction exceed the 240 µg/L PCE discharge limit, the water will be treated prior to discharge to the sanitary sewer. Water that may contain PCE includes:

- Stormwater that accumulates in the excavation and is in contact with PCE-impacted soils or mixes with PCE-impacted groundwater;
- Perched groundwater that seeps into the excavation;
- Deep groundwater pumped from temporary construction dewatering well points/sumps; and
- Groundwater generated from sumps used for limited dewatering of elevator pit and core footing excavations

8.2.2 Footing Drain / Groundwater Capture System

As noted above, the planned redevelopment requires the use of footing drains to control hydrostatic pressure on the building walls. A portion of this footing drain system will capture PCE-contaminated water originating from upgradient sources (Former Thinker Toys Site). That portion of the footing drain system will be segregated from the remaining portions of the footing drain to avoid placing PCE-contaminated water into the storm drain system. Estimated lateral extent of the proposed groundwater capture system is shown on Figure 9.

The segregated portion of the footing drain along the north property line may be extended further to the east if soil characterization sampling during construction indicates the PCE plume extends further to the east than currently estimated. The capture system will collect contaminated groundwater from approximately 70 to 90 feet bgs at the Subject Property. The base of the construction excavation will not penetrate the aquitard layer and extend into the underlying regional aquifer. There is, therefore, minimal risk of vertical migration of dissolved-phase contaminants from the shallow to the deeper aquifer.

Based on the relatively low permeability of the glacial till and silty outwash soil, long-term flow rates of perched groundwater to the segregated capture system are anticipated to be 10 gallons per minute or less. The possible need to treat captured groundwater with technologies such as granular activated carbon or air sparging prior to discharge in the sanitary sewer will depend on whether PCE concentrations in the captured water exceed KCIW's 240 µg/L PCE discharge limit. The building design will include provisions for a water treatment area in the bottom floor of the parking garage where treatment equipment

can be located, if necessary. Discharge flow volumes and other discharge criteria will be met to satisfy the conditions of the MDA.

The footing drain system is expected to operate and discharge water to the sanitary sewer for the life of the building. Post-construction operation, maintenance, and monitoring requirements for the groundwater capture system are summarized in Section 8.3.

It is expected that at some time in the future the upgradient source property(ies) will be remediated and groundwater quality beneath the Subject Property will improve as a result. Groundwater from the segregated portion of the footing drain system will continue to be discharged under the KCIW permit as long as necessary but may be re-routed to the storm drain system based on ongoing testing and demonstrated compliance with applicable discharge limits.

8.2.3 Vapor Barrier Contingency

As noted above, the available data do not currently suggest that a vapor intrusion barrier is required at the Subject Property. If additional data become available indicating that such a barrier is required, one will be designed and constructed to account for the following:

- Installation directly above the layer onto which the sub-slab is poured and behind subsurface perimeter walls, including portions of any elevator shafts that may extend below the sub-slab.
- Air-tight seal (fully sealed seams, sealing where utilities penetrate the concrete walls/slab etc.).
- Compatibility with CVOCs at concentrations exceeding the known maximum concentrations identified near the Subject Property which can withstand degradation caused by CVOCs.
- Compatibility with the building waterproofing system and perimeter footing drain design.
- Possible preferential pathways for vapor that may be created by nearby subsurface utilities.
- A specialty subcontractor will install the vapor barrier in accordance with the design and project/barrier manufacturer's specifications. Vapor barrier design details and specifications will be prepared once designs for the building foundation and other subgrade features are completed.
- Inspection and testing of the completed vapor barrier installation to verify its functionality and patch any leaks that may remain following construction.

8.3 Post-Construction Action

Operation, maintenance, and monitoring of engineered controls, groundwater monitoring, and institutional controls following construction are described in the following sections.

8.3.1 Post-Construction Groundwater Monitoring

As indicated above, Onni is not a PLP for the contamination which has passively migrated onto the subject property and has no obligation to monitor groundwater quality. As part of the EC, Ecology may require long-term groundwater monitoring to assess improvements in the deeper Advance Outwash aquifer groundwater quality and to assess whether the EC can be removed based upon compliance with cleanup levels. The perched one aquifer will be fully removed from the Subject Property during construction and will have been removed from the immediately upgradient Schnitzer Property. Therefore perched zone wells cannot be installed on the Subject Property.

For groundwater monitoring within the deeper Advanced Outwash aquifer, it is anticipated that up to five wells will be constructed for the purposes of long-term compliance monitoring and demonstrating compliance with cleanup levels. Two wells will be located just off the northern and northwesternmost property boundaries to evaluate the migration of impacted groundwater onto the Subject Property form upgradient sources. An additional three wells will be installed at locations in the east, south, and central portions of the bottom floor of the sub-grade parking structure. Because the subsurface parking garage will extend lot-line to lot-line, monitoring wells will be installed either during construction of the sub-grade parking structure after the bottom floor foundation has been installed or after construction of the sub-grade parking structure is complete using a limited access rig capable of drilling within the limited height clearance of the bottom floor of the parking garage.

The locations of monitoring wells may be adjusted based on the findings of the Contained-In Determination investigation and the distribution of soil or groundwater impacts during the remedial action implementation. If performance soil sampling and groundwater sampling data appear to eliminate the need for such wells and sampling, Onni will provide this information to Ecology and request confirmation that such wells and sampling are not needed.

New monitoring wells will be installed in accordance with Ecology requirements (WAC 173-160). Groundwater samples will be submitted for chemical analysis of PCE and its degradation products. Monitoring well installation and sampling will be conducted in accordance with a groundwater monitoring plan prepared under separate cover and which will be submitted to Ecology for review and approval under the VCP.

8.3.2 Cap Monitoring and Maintenance

Cap monitoring and maintenance will be implemented following redevelopment. For the purpose of this cleanup action, the walls and bottom floor slab of the parking garage are considered a cap/barrier that isolates contamination remaining in place adjacent to and beneath the Subject Property. Cap monitoring

and maintenance will be handled by Onni or a subsequent ownership entity as part of the general housekeeping and maintenance of the Subject Property. The integrity of the cap and associated moisture/vapor barrier will need to be maintained consistent with standard building maintenance practices. Monitoring and maintenance activities will be described in detail in a "Post-Construction Environmental Management Plan" for the Property.

8.3.3 Groundwater Capture System Operation, Maintenance and Monitoring

Post-construction operation, maintenance, and monitoring will be required for the groundwater capture system. The following activities will be performed:

- Preparation of quarterly Discharge Monitoring Reports (DMRs) for submittal to KCIW in compliance with standard discharge authorization requirements. DMRs require tracking the volume of water discharged on a monthly basis and collection and analysis of water samples on a quarterly basis. Samples of water collected will be submitted for analysis of CVOCs to evaluate compliance with sewer discharge requirements; and

- O&M of groundwater treatment system components (if treatment of water from the capture system is required prior to sewer discharge).

Details regarding these activities will be presented in the Post-Construction Environmental Management Plan, which will be a component of the Cleanup Action Report.

8.3.4 Environmental Covenant / Institutional Controls

The EC and institutional controls will be considered part of the cleanup action and will likely include:

- Requirements for notifications of changes in ownership or changes in land use;

- Cap barrier maintenance and inspections (i.e., maintaining the building walls and foundation);

- Post-remediation groundwater monitoring activities;

- Land use restrictions prohibiting the use of groundwater beneath the Subject Property for drinking water;

- Description of areas at the limits of the excavation where soil exceeding cleanup levels remains; and

- Post-cleanup soil handling protocols that building/facility management staff can use to advise future utility/excavation contractors on the presence of residual contamination.

The institutional controls and requirements for engineering controls will be memorialized and formalized in an EC. Onni will draft the EC and submit it to Ecology for review and approval. The EC will then be recorded with the King County Recorder's office and attached to the title for the land.

9.0 SCHEDULE

Construction for the planned redevelopment and concurrent cleanup is anticipated to begin in the second quarter of 2022. Excavation activities for the redevelopment are anticipated to be completed within about 9 months of the start date, subject to confirmation from the selected excavation contractor. Installation of the segregated footing drain system will take place during building foundation construction An EC will be prepared after the redevelopment is completed. The Restricted Area of the EC will be based on the final bottom of excavation sampling results. Groundwater monitoring, if required will be performed for one year once construction of the building is completed. The frequency of long-term groundwater monitoring will be re-evaluated based on the results of the first four quarters of data and with the understanding that Onni is not the PLP for the contamination at the property. The PLPs for that contamination are associated with the Former Thinker Toys Site. Onni or a subsequent ownership entity will make the monitoring wells it installs accessible to the Former Thinker Toys Site PLPs to allow them to monitor the extent and migration of contamination from their property.

10.0 DOCUMENTATION

This section summarizes the documentation that will be completed in accordance with a MTCA-compliant cleanup action and the ECRA. Cleanup activities will be documented in field reports and a MTCA-compliant CAR. An O&M Plan for the Groundwater Capture System and a Post-Construction Environmental Management Plan will be prepared under separate covers following construction and will be presented as attachments to the CAR.

10.1 Field Reports

Daily field reports will be prepared to document cleanup activities. Field reports will include the following:

- A description of soil characterization sampling activities (sample names, locations, etc.), chemical analytical results, grid cell soil conditions, and final designation of each cell as contaminated or clean. The description will state whether the soil was contaminated with PCE, petroleum, or both.
- A description of cleanup activities including estimated quantities (cubic yards per tons) and locations (grid cells) where contaminated soil was removed from the Subject Property.
- Team members and their responsibilities.
- Time of arrival/entry on-property and time of departure.

- Other personnel present at the Subject Property.
- Summary of pertinent meetings or discussions with contractor personnel or regulatory agency staff.
- Photographs documenting cleanup actions.
- Deviations from sampling plans, Site safety plans, etc.
- Levels of safety protection (PPE).
- Calibration readings for vapor field screening equipment used and equipment model.

10.2 Cleanup Action Report

At the completion of the redevelopment, a MTCA-compliant CAR will be prepared consistent with the requirements of WAC 173-340-515(4)(a)-(b) and submitted to Ecology to document removal of contaminated soil and groundwater and installation of engineered controls. The report will include:

- A narrative of the actions performed, the findings of those actions, and the conclusions supported by those findings;
- Summary tables of all data collected;
- Graphical depictions of pertinent data;
- Final volumes of excavated and disposed contaminated soils and supporting documentation for disposal;
- Hardcopies of all laboratory analytical reports; and
- Other information pertinent to the findings and conclusions of the cleanup action.

As required by Ecology Policy 840 all chemical data generated during the cleanup action will be submitted to Ecology's Environmental Information Management (EIM) System database as required to obtain a property-specific NFA determination from Ecology.

10.3 Compliance Monitoring Reports

Compliance monitoring reports summarizing O&M activities and water quality test results for the contaminated groundwater capture system will be prepared and submitted to Ecology on a routine basis. Reports will be prepared as required by the EC and the groundwater compliance monitoring plan.

Compliance monitoring data will also be submitted to Ecology's EIM.

11.0 REFERENCES

Aspect Consulting. 2020. *Remedial Investigation Work Plan, 10605, 10619, 10635 NE 8th Street, Bellevue, Washington*. 7 February.

City of Bellevue. 2013. City of Bellevue Zoning Map.

Environmental Partners, Inc. (EPI). 2017. *Phase I Environmental Site Assessment Report, Onni Bellevue Property, 606 and 620 106th Avenue Northeast, Bellevue, Washington*. Prepared for Onni Capital. 15 November.

———. 2019. "Technical Memorandum RE: Summary of Environmental Considerations Due to PCE Impacts." Prepared for Mr. David Evans and Mr. Brendan Reeves, Onni Group. 6 February.

GeoEngineers. 2014. *Remedial Investigation and Feasibility Study, Sterling Realty Organization, Bellevue Corner Property, 10605 and 10619 NE 8th Street, Bellevue, Washington*. 15 December.

Terra Associates, Inc. 2008. *Limited Phase II Environmental Site Assessment, SRO Site, SEC NE 8th Street and 106th Avenue NE, Bellevue, Washington*. 17 July.

U.S. Geologic Survey (USGS). 2007. Pacific NW Geologic Mapping, Bellevue.

12.0 LIMITATIONS

To the extent that preparation of this RI/FS/CAP has required the application of best professional judgment and the application of accepted engineering and scientific principles, certain results of this work have been based on subjective interpretation. TRC makes no warranties express or implied, including and without limitation, warranties as to merchantability or fitness for a particular purpose. The information provided in this RI/FS/CAP is not to be construed as legal advice.

Actual costs for remedial action implementation will vary from the estimated costs presented herein.

Tables

Table 1
Summary of Soil Sample Analytical Results for HVOCs
Remedial Investigation / Feasibility Study / Cleanup Action Plan
Onni 106th Ave Bellevue LLC
606 and 620 106th Avenue Northeast, Bellevue, WA

Boring Location	Sample ID	Lab Report	Sample Depth (in feet)	Sample Date	Volatile Organic Compounds[a]				
					Tetrachloro-ethene (PCE)	Trichloro-ethene (TCE)	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Vinyl Chloride
URS - MW-5	URS - MW-5	URS	24	11/18/2008	<0.02	--	--	--	--
	URS - MW-5		31.5	11/18/2008	<0.02	--	--	--	--
URS - MW-6	URS - MW-6	URS	21.5	11/18/2008	<0.02	--	--	--	--
	URS - MW-6		31.5	11/18/2008	<0.02	--	--	--	--
URS - MW-7	URS - MW-7	URS	26.5	11/18/2008	<0.02	--	--	--	--
	URS - MW-7		31.5	11/18/2008	<0.02	--	--	--	--
URS - SB-5	URS - SB-5	URS	24.5	11/17/2008	<0.02	--	--	--	--
	URS - SB-5		29	11/17/2008	<0.02	--	--	--	--
URS - SB-6	URS - SB-6	URS	24	11/17/2008	<0.02	--	--	--	--
	URS - SB-6		34	11/17/2008	<0.02	--	--	--	--
URS - SB-7	URS - SB-7	URS	24	11/17/2008	<0.02	--	--	--	--
	URS - SB-7		31.5	11/17/2008	<0.02	--	--	--	--
URS - SB-18	URS - SB-18	URS	30	11/15/2011	<0.0130	<0.0195	<0.0130	--	--
	URS - SB-18		35	11/15/2011	<0.0120	<0.0180	**0.000299 J**	--	--
	URS - SB-18		40	11/15/2011	<0.00765	<0.0115	<0.00765	--	--
	URS - SB-18		45	11/15/2011	<0.00801	<0.0120	<0.00801	--	--
	URS - SB-18		50	11/15/2011	<0.00914	<0.0137	<0.00914	--	--
	URS - SB-18		55	11/15/2011	<0.0134	<0.0201	<0.0134	--	--
	URS - SB-18		60	11/15/2011	<0.0162	<0.0243	<0.0162	--	--
	URS - SB-18		65	11/15/2011	<0.0173	<0.0259	<0.0173	--	--
	URS - SB-18		70	11/15/2011	<0.0160	<0.0240	<0.0160	--	--
	URS - SB-18		75	11/15/2011	<0.0115	<0.0173	<0.0115	--	--
URS - SB-19	URS - SB-19	URS	30	11/16/2011	<0.0131	<0.0196	<0.0131	--	--
	URS - SB-19		35	11/16/2011	<0.0119	<0.0178	<0.0119	--	--
	URS - SB-19		40	11/16/2011	<0.0142	<0.0213	<0.0142	--	--
	URS - SB-19		45	11/16/2011	<0.0155	<0.0233	<0.0155	--	--
	URS - SB-19		50	11/16/2011	**0.000719 J**	<0.0284	<0.0189	--	--
	URS - SB-19		55	11/16/2011	**0.00117 J**	<0.0315	<0.0210	--	--
	URS - SB-19		60	11/16/2011	**0.0219**	<0.0244	<0.0163	--	--
	URS - SB-19		65	11/16/2011	**0.00196 J**	<0.0331	<0.0221	--	--
	URS - SB-19		70	11/16/2011	<0.0156	<0.0234	<0.0156	--	--
	URS - SB-19		75	11/16/2011	<0.0118	<0.0177	<0.0118	--	--
URS - SB-20	URS - SB-20	URS	30	11/17/2011	**0.00284 J**	<0.0166	<0.0110	--	--
	URS - SB-20		35	11/17/2011	**0.000939 J**	<0.0183	<0.0122	--	--
	URS - SB-20		40	11/17/2011	**0.00140 J**	<0.0117	<0.00782	--	--
	URS - SB-20		45	11/17/2011	**0.000694 J**	<0.0158	<0.0105	--	--
	URS - SB-20		50	11/17/2011	**0.00192 J**	<0.0122	<0.00816	--	--
	URS - SB-20		55	11/17/2011	**0.00655 J**	<0.0242	<0.0161	--	--
	URS - SB-20		60	11/17/2011	<0.0163	<0.0244	<0.0163	--	--
	URS - SB-20		65	11/17/2011	**0.00632 J**	<0.0231	<0.0154	--	--
	URS - SB-20		70	11/17/2011	<0.0163	<0.0245	<0.0163	--	--
	URS - SB-20		75	11/17/2011	<0.0147	<0.0220	<0.0147	--	--
URS - SB-22	URS - SB-22	URS	30	11/18/2011	<0.0123	<0.0184	<0.0123	--	--
	URS - SB-22		35	11/18/2011	<0.0153	<0.0229	<0.0153	--	--
	URS - SB-22		40	11/18/2011	**0.000251 J**	<0.0188	<0.0125	--	--
	URS - SB-22		45	11/18/2011	**0.000417 J**	<0.0169	<0.0113	--	--
	URS - SB-22		50	11/18/2011	**0.000527 J**	<0.0152	<0.0101	--	--
	URS - SB-22		55	11/18/2011	<0.0186	<0.0279	<0.0186	--	--
	URS - SB-22		60	11/18/2011	<0.0162	<0.0242	<0.0162	--	--
	URS - SB-22		65	11/18/2011	<0.0193	<0.0290	<0.0193	--	--
	URS - SB-22		70	11/18/2011	<0.016	<0.0240	<0.0160	--	--
	URS - SB-22		75	11/18/2011	<0.0119	<0.0178	<0.0119	--	--
URS - SB-23	URS - SB-23	URS	30	11/21/2011	<0.0137	<0.0205	<0.0137	--	--
	URS - SB-23		35	11/21/2011	<0.0156	<0.0233	<0.0156	--	--
	URS - SB-23		40	11/21/2011	<0.00833	<0.0125	<0.00833	--	--
	URS - SB-23		45	11/21/2011	<0.0094	<0.0141	<0.0094	--	--
	URS - SB-23		50	11/21/2011	<0.0078	<0.0117	<0.0078	--	--
	URS - SB-23		55	11/21/2011	<0.0171	<0.0257	<0.0171	--	--
	URS - SB-23		60	11/21/2011	<0.014	<0.0209	<0.0140	--	--
	URS - SB-23		65	11/21/2011	<0.0148	<0.0222	<0.0148	--	--
	URS - SB-23		70	11/21/2011	<0.016	<0.0240	<0.0160	--	--
	URS - SB-23		75	11/21/2011	<0.0169	<0.0254	<0.0169	--	--
URS - SB-24	URS - SB-24	URS	30	11/21/2011	<0.0158	<0.0237	<0.0158	--	--
	URS - SB-24		35	11/21/2011	<0.00946	<0.0142	<0.00946	--	--
	URS - SB-24		40	11/21/2011	<0.0104	<0.0155	<0.0104	--	--
	URS - SB-24		45	11/21/2011	<0.0065	<0.00975	<0.0065	--	--
	URS - SB-24		50	11/21/2011	<0.00531	<0.00796	<0.00531	--	--
	URS - SB-24		55	11/21/2011	<0.0116	<0.0175	<0.0116	--	--
	URS - SB-24		65	11/21/2011	<0.0138	<0.0207	<0.0138	--	--
	URS - SB-24		70	11/21/2011	<0.0168	<0.0252	<0.0168	--	--
	URS - SB-24		75	11/21/2011	<0.0131 J	<0.0196 J	<0.0131 J	--	--

Table 1
Summary of Soil Sample Analytical Results for HVOCs
Remedial Investigation / Feasibility Study / Cleanup Action Plan
Onni 106th Ave Bellevue LLC
606 and 620 106th Avenue Northeast, Bellevue, WA

Boring Location	Sample ID	Lab Report	Sample Depth (in feet)	Sample Date	Volatile Organic Compounds[a]				
					Tetrachloro-ethene (PCE)	Trichloro-ethene (TCE)	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Vinyl Chloride
TH17-01	TH17-01-40	710481	40	10/30/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-01-45		45	10/30/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-01-50		50	10/30/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-01-55		55	10/30/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-01-60		60	10/30/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-01-65	711001	65	10/31/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-01-70		70	10/31/2017	<0.025	<0.02	<0.05	<0.05	<0.05
TH17-02 (MW17-01)	MW17-01-40	711162	40	11/8/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-01-45		45	11/8/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-01-50		50	11/8/2017	**0.033**	<0.02	<0.05	<0.05	<0.05
	MW17-01-55		55	11/8/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-01-60		60	11/8/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-01-65		65	11/8/2017	**0.30**	<0.02	<0.05	<0.05	<0.05
	MW17-01-70		70	11/8/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-01-75		75	11/8/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-01-80		80	11/8/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-01-85		85	11/8/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-01-90		90	11/8/2017	<0.025	<0.02	<0.05	<0.05	<0.05
TH17-03	TH17-03-20	711222	20	11/10/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-03-40		40	11/10/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-03-45		45	11/10/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-03-50	711246	50	11/13/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-03-55		55	11/13/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-03-60		60	11/13/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-03-65		65	11/13/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-03-70		70	11/13/2017	<0.025	<0.02	<0.05	<0.05	<0.05
TH17-04 (MW17-02)	MW17-02-40	711194	40	11/9/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-02-45		45	11/9/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-02-50		50	11/9/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-02-55		55	11/9/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-02-60		60	11/9/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-02-65		65	11/9/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-02-70		70	11/9/2017	<0.025	<0.02	<0.05	<0.05	<0.05
TH17-05 (MW17-03)	MW17-03:30	711117	30	11/6/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-03:40		40	11/6/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-03:50		50	11/6/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-03:60		60	11/6/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	MW17-03:70		70	11/6/2017	<0.025	<0.02	<0.05	<0.05	<0.05
TH17-06	TH17-06-30	711040	30	11/1/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-06-40		40	11/1/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-06-50		50	11/1/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-06-60		60	11/1/2017	<0.025	<0.02	<0.05	<0.05	<0.05
	TH17-06-70		70	11/1/2017	<0.025	<0.02	<0.05	<0.05	<0.05
MTCA Method A Soil Cleanup Level for Unrestricted Land Uses[b]					**0.05**	**0.03**	**160[c]**	**1,600[c]**	**0.002[d]**

Notes:

All results presented in milligrams per kilogram (mg/kg).

Bold Bold result exceeds the laboratory detection limit.

Shaded result exceeds the cleanup level.

a Analyzed by EPA Method 8260C.

b Model Toxics Control Act (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Use, Table 740-1, Washington Administrative Code (WAC) 173-340-900, unless otherwise noted.

c MTCA Method B Soil Cleanup Levels from Cleanup Levels and Risk Calculations (CLARC) database.

d MTCA Method B Soil Cleanup Levels from Cleanup Levels and Risk Calculations (CLARC) database and associated Guidance (https://fortress.wa.gov/ecy/clarc/FocusSheets/VinylChloride.pdf).

-- Sample was not analyzed for this compound.

HVOCs Halogenated volatile organic compounds.

Qualifier:

J Estimated value.

Table 2
Summary of Groundwater Sample Analytical Results for HVOCs
Remedial Investigation / Feasibility Study / Cleanup Action Plan
Onni 106th Ave Bellevue LLC
606 and 620 106th Avenue Northeast, Bellevue, WA

Sample ID	Lab Report	Depth to Water (in feet)	Aquifer	Sample Date	Volatile Organic Compounds[a]				
					Tetrachloro-ethene (PCE)	Trichloro-ethene (TCE)	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Vinyl Chloride
B4/MW-4	711271	74.66	Deep	11/14/2017	<1	<1	<1	<1	<0.2
URS-MW-5	--	0.20	Shallow	--	--	--	--	--	--
URS-MW-6	711271	42.36	Shallow	11/14/2017	<1	<1	<1	<1	<0.2
URS-MW-7	711271	34.22	Shallow	11/14/2017	**21**	<1	**1.6**	<1	<0.2
MW17-01:20171115	711298	69.4	Deep	11/15/2017	**7.7**	<1	<1	<1	<0.2
MW17-02:20171115	711298	69.59	Deep	11/15/2017	<1	<1	<1	<1	<0.2
MW17-03:20171115	711298	72.15	Deep	11/15/2017	<1	<1	<1	<1	<0.2
MTCA Method A Groundwater Cleanup Level[b]					**5**	**5**	**16[c]**	**160[c]**	**0.2**

Notes:
All results presented in micrograms per liter (µg/L).
Bold Bold result exceeds the laboratory detection limit.
Shaded result exceeds the cleanup level.
a Analyzed by EPA Method 8260C.
b Model Toxics Control Act (MTCA) Method A Groundwater Cleanup Levels, Washington Administrative Code (WAC) 173-340-900, Table 720-1, unless otherwise noted.
c MTCA Method B Groundwater Cleanup Levels from Cleanup Levels and Risk Calculations (CLARC) database.
-- Sample not collected - insufficient water.

Table 3
Cost Estimate
Alternative 1 — *PCE-Contaminated Soil Excavation, Hydraulic Control with Groundwater Treatment, and Environmental Covenant*
Remedial Investigation / Feasibility Study / Cleanup Action Plan
Onni 106th Ave Bellevue LLC
606 & 620 106th Avenue Northeast, Bellevue, WA

Task	Component	Units	Basis	Unit Cost	Subtotal	TRC Labor	Component Subtotal	Task Subtotal
Pre-Remedial Activities								
	Contained-In Determination Application & IDW Support	1	LS			$ 10,000	$ 10,000	
	Preparation of CAP with SAP/HASP/QAPP/Schedule	1	LS			$ 25,000	$ 25,000	
	Engineering Design Report	1	LS			$ 20,000	$ 20,000	
	Cleanup Action Plan Preparation	1	LS			$ 25,000	$ 25,000	
	Bid Solicitation and Contracting (for GW Treatment Sys)	1	LS			$ 7,500	$ 7,500	
								$ 87,500
PCE-Contaminated Soil Excavation								
	Post-Demo Site Characterization (CID Drilling)	1	each	$ 32,500	$ 32,500	$ 25,800	$ 58,300	
	Well Decommissioning	1	each	$ 10,500	$ 10,500	$ 5,000	$ 15,500	
	Shallow Excavation Oversight & Sampling	10	days	$ 3,450		$ 34,500	$ 34,500	
	Shallow Excavation subcontractor excavation and loading	10	days	$ 10,000	$ 100,000		$ 100,000	
	Shallow hazardous waste transport/disposal costs (per ton)	4,000	tons	$ 45	$ 180,000		$ 180,000	
	Shallow Performance Soil Sampling (VOCs by 8260C via onsite lab)	18	each	$ 290	$ 5,220		$ 5,220	
	Shallow Confirmation Soil Sampling (VOCs by 8260, std TAT)	33	each	$ 150	$ 4,950		$ 4,950	
	Deep Excavation Oversight & Sampling	30	days	$ 3,450		$ 103,500	$ 103,500	
	Deep Excavation subcontractor excavation and loading	30	days	$ 10,000	$ 300,000		$ 300,000	
	Deep Hazardous waste transport/disposal costs (per ton)	16,000	tons	$ 45	$ 720,000		$ 720,000	
	Deep Performance Soil Sampling (VOCs by 8260C via onsite lab)	115	each	$ 290	$ 33,350		$ 33,350	
	Deep Confirmation Soil Sampling (VOCs by 8260C, std TAT)	108	each	$ 150	$ 16,200		$ 16,200	
	Pre-Contingency subtotal:						$ 1,571,520	
	Contingency for Unexpected costs							
	10% of Subtotal						$ 157,152	
								$ 1,728,672
Groundwater Treatment System (Capital Cost)								
	GW Extraction Pilot Study	1	LS	$ 1,200	$ 1,200	$ 6,500	$ 7,700	
	GW Extraction Well Installation (4" PVC to 20 ft bgs)(Auger)	4	each	$ 5,000	$ 20,000	$ 4,500	$ 24,500	
	Wellhead Connections/Vaults	4	each	$ 2,000	$ 8,000		$ 8,000	
	Installation of Conveyance Piping	400	LF	$ 45	$ 18,000		$ 18,000	
	Surface Trench Repair	1	LS	$ 10,000	$ 10,000		$ 10,000	
	Drill Cuttings Disposal	2	bin	$ 2,500	$ 5,000		$ 5,000	
	In-Well Product and Water Recovery Pumps	4	each	$ 6,000	$ 24,000		$ 24,000	
	Variable Frequency Drive	1	LS	$ 6,000	$ 6,000		$ 6,000	
	Granular Activated Carbon (GAC) Vessels, 1,000 gallon	2	LS	$ 10,000	$ 20,000		$ 20,000	
	Plumbing/Piping	125	LF	$ 25	$ 3,125		$ 3,125	
	Instrumentation/Controls/Meters	1	LS	$ 14,000	$ 14,000		$ 14,000	
	Control Panel, Programmable Logic Controls	1	LS	$ 16,000	$ 16,000		$ 16,000	
	Telemetry	1	LS	$ 2,500	$ 2,500		$ 2,500	
	Electrical Service	1	LS	$ 15,000	$ 15,000		$ 15,000	
	Treatment System Compound	1	LS	$ 15,000	$ 15,000		$ 15,000	
	Remediation System Oversight/Documentation/Support	1	LS			$ 20,000	$ 20,000	
	System Startup/Initial Monitoring (one month)	1	LS			$ 22,000	$ 22,000	
	Treatment System Installation Report	1	LS			$ 20,000	$ 20,000	
	Category Subtotals				*$ 177,825*	*$ 73,000*	*$ 250,825*	
	Tax on Contractor Services/Capital Equipment (9.5%)				$ 16,900		$ 16,900	
								$ 267,725
System Operation and Maintenance								
	Annual System O&M (10 Years)							
	Electrical Usage	12	months	$ 600	$ 7,200		$ 7,200	
	Water Discharge Sampling/O&M	12	months	$ 2,000	$ 24,000		$ 24,000	
	Annual O&M Subtotal						$ 31,200	
	10-Year O&M Subtotal						*$ 312,000*	
	Carbon Replacement (Annual Replacement)	2,000	pounds	$ 1.80	$ 3,600	$ 1,000	$ 4,600	
	10-Year O&M Subtotal						*$ 46,000*	
	Contingency for Equipment Replacement							
	10% of Capital Equipment Subtotal				$ 17,783		$ 17,783	
								$ 375,783
Compliance Groundwater Monitoring								
	Semi-Annual Sampling (10 Years)							
	Groundwater Monitoring (2 events/year for 10 years)	2	events	$ 1,200	$ 2,400	$ 13,000	$ 15,400	
	Laboratory Analytical (2 events/year for 10 years)	2	events	$ 1,500	$ 3,000		$ 3,000	
	Annual Reporting	1	years			$ 10,000	$ 10,000	
	Annual Groundwater Compliance Monitoring Subtotal						$ 28,400	
	10-Year Groundwater Compliance Monitoring Subtotal						*$ 284,000*	
								$ 284,000
Environmental Covenant and Agency Negotiations								
	Final reporting, Environmental Covenant	1	each			$ 25,000	$ 25,000	
	Agency negotiations	1	each	$ 5,000	$ 5,000	$ 5,000	$ 10,000	
	Reporting and Agency Negotiations Subtotal						$ 35,000	
								$ 35,000
Site Restoration and Closure								
	Well Decommissioning	9	well	$ 1,500	$ 13,500	$ 8,000	$ 21,500	
	Equipment/Enclosure Decommissioning	1	LS	$ 10,000	$ 10,000	$ 2,500	$ 12,500	
	Final Closure Report	1	LS			$ 10,000	$ 10,000	
	Site Restoration and Closure Subtotal						$ 44,000	
								$ 44,000
ESTIMATED PROJECT TOTAL								***$ 2,823,000***

Table 4
Cost Estimate
Alternative 2 — *PCE-Contaminated Soil Excavation, Segregated Footing Drain Water Collection, and Environmental Covenant*
Remedial Investigation / Feasibility Study / Cleanup Action Plan
Onni 106th Ave Bellevue LLC
606 & 620 106th Avenue Northeast, Bellevue, WA

Task and Component	Units	Basis	Unit Cost	Subtotal	TRC Labor	Component Subtotal	Task Subtotal
Pre-Remedial Activities							
Contained-In Determination Application & IDW Support	1	LS			$ 10,000	$ 10,000	
Preparation of CAP with SAP/HASP/QAPP/Schedule	1	LS			$ 25,000	$ 25,000	
Engineering Design Report	1	LS			$ 15,000	$ 15,000	
Cleanup Action Plan Preparation	1	LS			$ 25,000	$ 25,000	
							$ 75,000
PCE-Contaminated Soil Excavation							
Post-Demo Site Characterization (CID Drilling)	1	each	$ 32,500	$ 32,500	$ 25,800	$ 58,300	
Well Decommissioning	1	each	$ 10,500	$ 10,500	$ 5,000	$ 15,500	
Shallow Excavation Oversight & Sampling	10	days	$ 3,450		$ 34,500	$ 34,500	
Shallow Excavation subcontractor excavation and loading	10	days	$ 10,000	$ 100,000		$ 100,000	
Shallow hazardous waste transport/disposal costs (per ton)	4,000	tons	$ 45	$ 180,000		$ 180,000	
Shallow Performance Soil Sampling (VOCs by 8260C via onsite	18	each	$ 290	$ 5,220		$ 5,220	
Shallow Confirmation Soil Sampling (VOCs by 8260, std TAT)	33	each	$ 150	$ 4,950		$ 4,950	
Deep Excavation Oversight & Sampling	30	days	$ 3,450		$ 103,500	$ 103,500	
Deep Excavation subcontractor excavation and loading	30	days	$ 10,000	$ 300,000		$ 300,000	
Deep Hazardous waste transport/disposal costs (per ton)	16,000	tons	$ 45	$ 720,000		$ 720,000	
Deep Performance Soil Sampling (VOCs by 8260C via onsite la	115	each	$ 290	$ 33,350		$ 33,350	
Deep Confirmation Soil Sampling (VOCs by 8260C, std TAT)	108	each	$ 150	$ 16,200		$ 16,200	
Pre-Contingency subtotal:						$ 1,571,520	
Contingency for Unexpected costs							
10% of Subtotal						$ 157,152	
							$ 1,728,672
Segregated Footing Drain Water Collection							
Installation of Footing Drains	1	LS	$ 10,000	$ 10,000		$ 10,000	
KCIW Discharge Authorization	1	LS	$ 5,000	$ 5,000	$ 2,500	$ 7,500	
Discharge Fee	1	LS	$ 40,000	$ 40,000		$ 40,000	
Monthly O&M (10 Years)							
TRC Monthly Discharge Readings & Sampling	12	months	$ 2,000	$ 24,000	$ 1,680	$ 25,680	
Monthly Disharge Fee (1,500 gallons @ $0.03/gallon)	12	months	$ 45.00	$ 540		$ 540	
Annual O&M Subtotal						$ 26,220	
10-Year O&M Subtotal						*$ 262,200*	
Subtotal:						$ 319,700	
Contingency for Equipment Replacement							
10% of Capital Equipment Subtotal						$ 1,000	
							$ 320,700
Compliance Groundwater Monitoring							
Semi-Annual Sampling (10 Years on 5 wells)							
Groundwater Monitoring (2 events/year for 10 years)	2	events	$ 1,200	$ 2,400	$ 13,000	$ 15,400	
Laboratory Analytical (2 events/year for 10 years)	2	events	$ 1,500	$ 3,000		$ 3,000	
Annual Reporting	1	years			$ 10,000	$ 10,000	
Annual Groundwater Compliance Monitoring Subtotal						$ 28,400	
10-Year Groundwater Compliance Monitoring Subtotal						*$ 284,000*	
							$ 284,000
Environmental Covenant and Agency Negotiations							
Final reporting, Environmental Covenant	1	each			$ 25,000	$ 25,000	
Agency negotiations	1	each	$ 5,000	$ 5,000	$ 5,000	$ 10,000	
Reporting and Agency Negotiations Subtotal						$ 35,000	
							$ 35,000
Site Restoration and Closure							
Well Decommissioning	5	well	$ 1,500	$ 7,500	$ 6,500	$ 14,000	
Final Closure Report	1	LS			$ 10,000	$ 10,000	
Site Restoration and Closure Subtotal						$ 24,000	
							$ 24,000
ESTIMATED PROJECT TOTAL							***$ 2,467,372***

Table 5
Cost Estimate
Alternative 3 — *PCE-Contaminated Soil Excavation, Segregated Footing Drain Water Collection, In-Situ Remediation, and Environmental Covenant*
Remedial Investigation / Feasibility Study / Cleanup Action Plan
Onni 106th Ave Bellevue LLC
606 & 620 106th Avenue Northeast, Bellevue, WA

Task and Component	Units	Basis	Unit Cost	Subtotal	TRC Labor	Component Subtotal	Task Subtotal
Pre-Remedial Activities							
Permitting (UIC for Injections)	1	LS			$ 3,500	$ 3,500	
Contained-In Determination Application & IDW Support	1	LS			$ 10,000	$ 10,000	
Preparation of CAP with SAP/HASP/QAPP/Schedule	1	LS			$ 25,000	$ 25,000	
Engineering Design Report	1	LS			$ 15,000	$ 15,000	
Cleanup Action Plan Preparation	1	LS			$ 25,000	$ 25,000	
Bid Solicitation and Contracting (for GW Treatment Sys)	1	LS			$ 7,500	$ 7,500	
							$ 86,000
PCE-Contaminated Soil Excavation							
Post-Demo Site Characterization (CID Drilling)	1	each	$ 32,500	$ 32,500	$ 25,800	$ 58,300	
Well Decommissioning	1	each	$ 10,500	$ 10,500	$ 5,000	$ 15,500	
Shallow Excavation Oversight & Sampling	10	days	$ 3,450		$ 34,500	$ 34,500	
Shallow Excavation subcontractor excavation and loading	10	days	$ 10,000	$ 100,000		$ 100,000	
Shallow hazardous waste transport/disposal costs (per ton)	4,000	tons	$ 45	$ 180,000		$ 180,000	
Shallow Performance Soil Sampling (VOCs by 8260C via o	18	each	$ 290	$ 5,220		$ 5,220	
Shallow Confirmation Soil Sampling (VOCs by 8260, std TA	33	each	$ 150	$ 4,950		$ 4,950	
Deep Excavation Oversight & Sampling	30	days	$ 3,450		$ 103,500	$ 103,500	
Deep Excavation subcontractor excavation and loading	30	days	$ 10,000	$ 300,000		$ 300,000	
Deep Hazardous waste transport/disposal costs (per ton)	16,000	tons	$ 45	$ 720,000		$ 720,000	
Deep Performance Soil Sampling (VOCs by 8260C via onsi	115	each	$ 290	$ 33,350		$ 33,350	
Deep Confirmation Soil Sampling (VOCs by 8260C, std TA	108	each	$ 150	$ 16,200		$ 16,200	
Pre-Contingency subtotal:						$ 1,571,520	
Contingency for Unexpected costs							
10% of Subtotal						$ 157,152	
							$ 1,728,672
Segregated Footing Drain Water Collection							
Installation of Footing Drains	1	LS	$ 10,000	$ 10,000		$ 10,000	
KCIW Discharge Authorization	1	LS	$ 5,000	$ 5,000	$ 2,500	$ 7,500	
Discharge Fee	1	LS	$ 40,000	$ 40,000		$ 40,000	
Monthly O&M (10 Years)							
TRC Monthly Discharge Readings & Sampling	12	months	$ 2,000	$ 24,000	$ 1,680	$ 25,680	
Monthly Disharge Fee (1,500 gallons @ $0.03/gallon)	12	months	$ 45.00	$ 540		$ 540	
Annual O&M Subtotal						$ 26,220	
10-Year O&M Subtotal						*$ 262,200*	
Subtotal:						$ 319,700	
Contingency for Equipment Replacement							
10% of Capital Equipment Subtotal						$ 1,000	
							$ 320,700
ERD Treatment System (Capital Cost)							
Bench Scale Pilot Testing	1	LS	$ 12,000	$ 12,000	$ 6,500	$ 18,500	
Injection Gallery Installation	4	each	$ 4,000	$ 16,000	$ 4,500	$ 20,500	
Manifold	1	each	$ 6,000	$ 6,000	$ 2,500	$ 8,500	
Connections/Vaults	4	each	$ 2,000	$ 8,000		$ 8,000	
Installation of Conveyance Piping	600	LF	$ 45	$ 27,000		$ 27,000	
Drill Cuttings Disposal	1	bin	$ 2,500	$ 2,500		$ 2,500	
EOS Amendment and Oversight (2 events)	8	LS	$ 3,000	$ 24,000	$ 10,000	$ 34,000	
Bioaugmentation Tank	1	LS	$ 7,000	$ 7,000		$ 7,000	
Poly Tank	1	LS	$ 2,500	$ 2,500		$ 2,500	
Argon Tank	1	LS	$ 100	$ 100		$ 100	
Treatment System Compound	1	LS	$ 15,000	$ 15,000		$ 15,000	
Remediation System Oversight/Documentation/Support	1	LS			$ 20,000	$ 20,000	
Pre Startup Field-Scale Pilot Testing	1	each	$ 25,000	$ 25,000	$ 25,000	$ 50,000	
System Startup/Initial Monitoring (one month)	1	LS			$ 22,000	$ 22,000	
Treatment System Installation Report	1	LS			$ 20,000	$ 20,000	
Category Subtotals				*$ 145,100*	*$ 110,500*	*$ 255,600*	
Contingency for Equipment Replacement							
10% of Capital Equipment Subtotal						$ 14,510	
Tax on Contractor Services/Capital Equipment (9.5%)				$ 13,800		$ 13,800	
							$ 283,910
Performance Groundwater Monitoring							
Quarterly Performance Sampling (2 Years on 5 wells)							
Groundwater Monitoring (4 events/year for 2 years)	4	events	$ 1,200	$ 4,800	$ 26,000	$ 30,800	
Laboratory Analytical (4 events/year for 2 years)	4	events	$ 2,500	$ 10,000		$ 10,000	
Annual Reporting	1	years			$ 10,000	$ 10,000	
Annual Quarterly Groundwater Performance Monitoring Subtotal						$ 50,800	
2-Year Groundwater Performance Monitoring Subtotal						*$ 101,600*	
							$ 101,600
Compliance Groundwater Monitoring							
Semi-Annual Compliance Sampling (10 Years on 5 wells)							
Groundwater Monitoring (2 events/year for 10 years)	2	events	$ 1,200	$ 4,800	$ 13,000	$ 17,800	
Laboratory Analytical (2 events/year for 10 years)	2	events	$ 1,500	$ 3,000		$ 3,000	
Annual Reporting	1	years			$ 10,000	$ 10,000	
Annual Groundwater Compliance Monitoring Subtotal						$ 30,800	
10-Year Groundwater Compliance Monitoring Subtotal						*$ 308,000*	
							$ 308,000
Environmental Covenant and Agency Negotiations							
Final reporting, Environmental Covenant	1	each			$ 25,000	$ 25,000	
Agency negotiations	1	each	$ 5,000	$ 5,000	$ 5,000	$ 10,000	
Reporting and Agency Negotiations Subtotal						$ 35,000	
							$ 35,000
Site Restoration and Closure							
Well Decommissioning	5	well	$ 1,000	$ 5,000	$ 6,500	$ 11,500	
Equipment/Enclosure Decommissioning	1	LS	$ 10,000	$ 10,000	$ 2,500	$ 12,500	
Final Closure Report	1	LS			$ 10,000	$ 10,000	
Site Restoration and Closure Subtotal						$ 34,000	
							$ 34,000
ESTIMATED PROJECT TOTAL							***$ 2,897,882***

Table 6
Remedial Alternative Ranking Table
Remedial Investigation / Feasibility Study / Cleanup Action Plan
Onni 106th Ave Bellevue LLC
606 & 620 106th Avenue Northeast, Bellevue, WA

Factor	Weighting[a]	Alternative 1 — PCE-Contaminated Soil Excavation, Hydraulic Control with Groundwater Treatment, and Environmental Covenant		Alternative 2 — PCE-Contaminated Soil Excavation, Segregated Footing Drain Water Collection, and Environmental Covenant		Alternative 3 — PCE-Contaminated Soil Excavation, Segregated Footing Drain Water Collection, In-Situ Remediation, and Environmental Covenant	
		Rank[b]	Value[c]	Rank	Value	Rank	Value
Protectiveness	0.3	3.7	1.10	3.8	1.15	4.0	1.20
Permanence	0.2	4.7	0.93	4.7	0.93	4.7	0.93
Long-Term Effectiveness	0.2	3.8	0.75	4.3	0.85	4.8	0.95
Short-Term Risk	0.1	3	0.30	4	0.40	2.5	0.25
Implementability	0.1	3	0.30	4.4	0.44	3	0.30
Public Concerns	0.1	5.0	0.50	5.0	0.50	4.0	0.40
Restoration Timeframe	0	4.0	0.00	3.0	0.00	4.0	0.00
Sum	**1**	**3.9**		**4.3**		**4.0**	

Notes:
a Ecology-prescribed weighting factors.
b Subjective ranking as discussed in FS Report. Highest rank is 5 and lowest rank is 1.
c Value equals subjective rank times the applicable Ecology prescribed weighting factor.

Table 8
Evaluation of Remedial Alternatives
Remedial Investigation / Feasibility Study / Cleanup Action Plan
Onni 106th Ave Bellevue LLC
606 & 620 106th Avenue Northeast, Bellevue, WA

Alternatives	Alternative 1 — PCE-Contaminated Soil Excavation, Hydraulic Control with Groundwater Treatment, and Environmental Covenant		Alternative 2 — PCE-Contaminated Soil Excavation, Segregated Footing Drain Water Collection, and Environmental Covenant		Alternative 3 — PCE-Contaminated Soil Excavation, Segregated Footing Drain Water Collection, In-Situ Remediation, and Environmental Covenant	
Description / Issues	*Combines PCE-contaminated soil removal with hydraulic control of contaminated groundwater migration onto the Site. Pilot study needed to determine radius of influence of groundwater extraction wells.*		*Combines PCE-contaminated soil removal with segregated footing drain water collection to address continued migration onto the property of PCE-contaminated groundwater.*		*Combines PCE-contaminated soil removal with segregated footing drain water collection in addition to in-situ treatment of onsite groundwater via Enhanced Reductive Dechlorination (ERD).*	
Criteria		***Score***		***Score***		***Score***
Protectiveness	Overall protectiveness of human health and the environment, including the degree to which existing risks are reduced, time required to reduce risk at the facility and attain cleanup standards, on-Site and off-Site risks resulting from implementing the alternative, and improvement of the overall environmental quality.					
Overall protectiveness	*Protective when complete*	*4*	*Protective when complete*	*4*	*Protective when complete*	*4*
Reduces existing risks	*Reduces risks when implemented*	*4*	*Reduces risks when implemented*	*4*	*Reduces risks when implemented*	*4*
Time required to reduce risk	*Longer duration required for to control plume migration*	*3*	*Short time frame if properly implemented*	*4*	*Longer duration required to complete 2 years of in-situ treatment*	*3*
On-Site risks	*Reduces risks with moderate level of certainty*	*3*	*Reduces risk with higher level of certainty*	*4*	*Reduces risk with higher level of certainty*	*4*
Off-Site risks	*Reduces risk with higher level of certainty*	*4*	*Reduces risks with moderate level of certainty*	*3*	*Reduces risk with higher level of certainty*	*4*
Improvement in environmetnal quality	*Higher level of improvement*	*4*	*Higher level of improvement*	*4*	*Higher level of improvement*	*5*
Criterion Score		***3.7***		***3.8***		***4.0***
Permanence	The degree to which the alternative permanently reduces the toxicity, mobility or volume of hazardous substances, including the adequacy of the alternative in destroying the hazardous substances, the reduction or elimination of hazardous substance releases and sources of releases, the degree of irreversibility of waste treatment process, and the characteristics and improvement of the overall environmental quality.					
Reduces toxicity, mobility, and volume	*Reduces toxicity, mobility and volume rapidly*	*5*	*Reduces toxicity, mobility and volume rapidly*	*5*	*Reduces toxicity, mobility and volume rapidly*	*5*
Degree of irreversibility	*Irreversible*	*5*	*Irreversible*	*5*	*Irreversible*	*5*
Waste characteristics	*Generates water waste*	*4*	*Generates water waste*	*4*	*Generates water waste*	*4*
Criterion Score		***4.7***		***4.7***		***4.7***
Long-Term Effectiveness	Long-term effectiveness includes the degree of certainty that the alternative will be successful, the reliability of the alternative during the period of time hazardous substances are expected to remain on-Site at concentrations that exceed cleanup levels, the magnitude of residual risk with the alternative in place, and the effectiveness of controls required to manage treatment residues or remaining wastes. The following types of cleanup action components may be used as a guide, in descending order, when assessing the relative degree of long-term effectiveness: Reuse or recycling; destruction or detoxification; immobilization or solidification; on-Site or off-Site disposal in an engineered, lined and monitored facility; on-Site isolation or containment with attendant engineering controls; and institutional controls and monitoring.					
Degree of Certainty	*Moderately certain*	*4*	*Highly certain*	*5*	*Highly certain*	*5*
Reliability	*Very reliable*	*5*	*Very reliable*	*5*	*Very reliable*	*5*
Residual Risk	*Moderate*	*3*	*Moderate*	*3*	*Low*	*4*
Technology hierarchy	*Moderately ranked*	*3*	*Somewhat highly ranked*	*4*	*Highly ranked*	*5*
Criterion Score		***3.8***		***4.3***		***4.8***

Table 8
Evaluation of Remedial Alternatives
Remedial Investigation / Feasibility Study / Cleanup Action Plan
Onni 106th Ave Bellevue LLC
606 & 620 106th Avenue Northeast, Bellevue, WA

Alternatives	Alternative 1 — PCE-Contaminated Soil Excavation, Hydraulic Control with Groundwater Treatment, and Environmental Covenant		Alternative 2 — PCE-Contaminated Soil Excavation, Segregated Footing Drain Water Collection, and Environmental Covenant		Alternative 3 — PCE-Contaminated Soil Excavation, Segregated Footing Drain Water Collection, In-Situ Remediation, and Environmental Covenant	
Description / Issues	*Combines PCE-contaminated soil removal with hydraulic control of contaminated groundwater migration onto the Site. Pilot study needed to determine radius of influence of groundwater extraction wells.*		*Combines PCE-contaminated soil removal with segregated footing drain water collection to address continued migration onto the property of PCE-contaminated groundwater.*		*Combines PCE-contaminated soil removal with segregated footing drain water collection in addition to in-situ treatment of onsite groundwater via Enhanced Reductive Dechlorination (ERD).*	
Criteria		***Score***		***Score***		***Score***
Short-Term Risk Management	The risk to human health and the environment associated with the alternative during construction and implementation, and the effectiveness of measures that will be taken to manage such risks.					
During construction	*Moderate risks associated with groundwater extraction well and treatment system installation complexity in sub-grade parking structure*	*3*	*Low risk*	*4*	*Moderate to high risks based on selected reagent, complexity of installation of injection system, and multiple rounds of injection work in sub-grade parking structure*	*2*
Effectiveness of risk management	*Somewhat effective*	*3*	*Effective*	*4*	*Somewhat effective*	*3*
Criterion Score		***3.0***		***4.0***		***2.5***
Implementability	Ability to be implemented including consideration of whether the alternative is technically possible, availability of necessary off-Site facilities, services and materials, administrative and regulatory requirements, scheduling, size, complexity, monitoring requirements, access for construction operations and monitoring, and integration with existing facility operations and other current or potential remedial actions.					
Technically possible	*Likely possible, dependent upon pilot testing and constructability in sub-grade parking structure*	*3*	*Possible with similar approaches used successfully on multiple sites*	*5*	*Likely possible, but technically complicated construction in sub-grade parking structure*	*3*
Access	*Challenging to install groundwater extraction wells and treatment system in sub-grade parking structure*	*2*	*No access issues anticipated*	*5*	*Challenging to install injection gallery and treatment system in sub-grade parking structure*	*2*
Availability of necessary resources	*Readily available*	*5*	*Readily available*	*5*	*Readily available*	*5*
Monitoring requirements	*Moderately high*	*3*	*Moderate*	*4*	*Moderately high*	*3*
Integration with existing features	*Low - requires large operational hub for treatment system and monitoring wells in sub-grade parking structure*	*2*	*Moderate - requires monitoring wells in sub-grade parking structure*	*3*	*Low - requires operational hub for injection equipment and monitoring wells in sub-grade parking structure*	*2*
Criterion Score		***3.0***		***4.4***		***3.0***
Public Concerns	Whether the community has concerns regarding the alternative and, if so, the extent to which the alternative addresses those concerns. This process includes concerns from individuals, community groups, local governments, tribes, federal and state agencies, or any other organization that may have an interest in or knowledge of the Site.					
Criterion Score	*No public concerns anticipated*	***5.0***	*No public concerns anticipated*	***5.0***	*No public concerns anticipated*	***4.0***
Restoration Time Frame	Determination of whether a cleanup action provides for a reasonable restoration time frame based on criteria in WAC 173-340-360(4)(b).					
Score	*Moderate time frame*	***4.0***	*Moderate to uncertain time frame*	***3.0***	*Moderate to shorter time frame*	***4.0***
Total Score	***27.1***		***29.2***		***26.9***	
Conceptual Level Cost	**$2,823,000**		**$2,467,372**		**$2,897,882**	

Figures

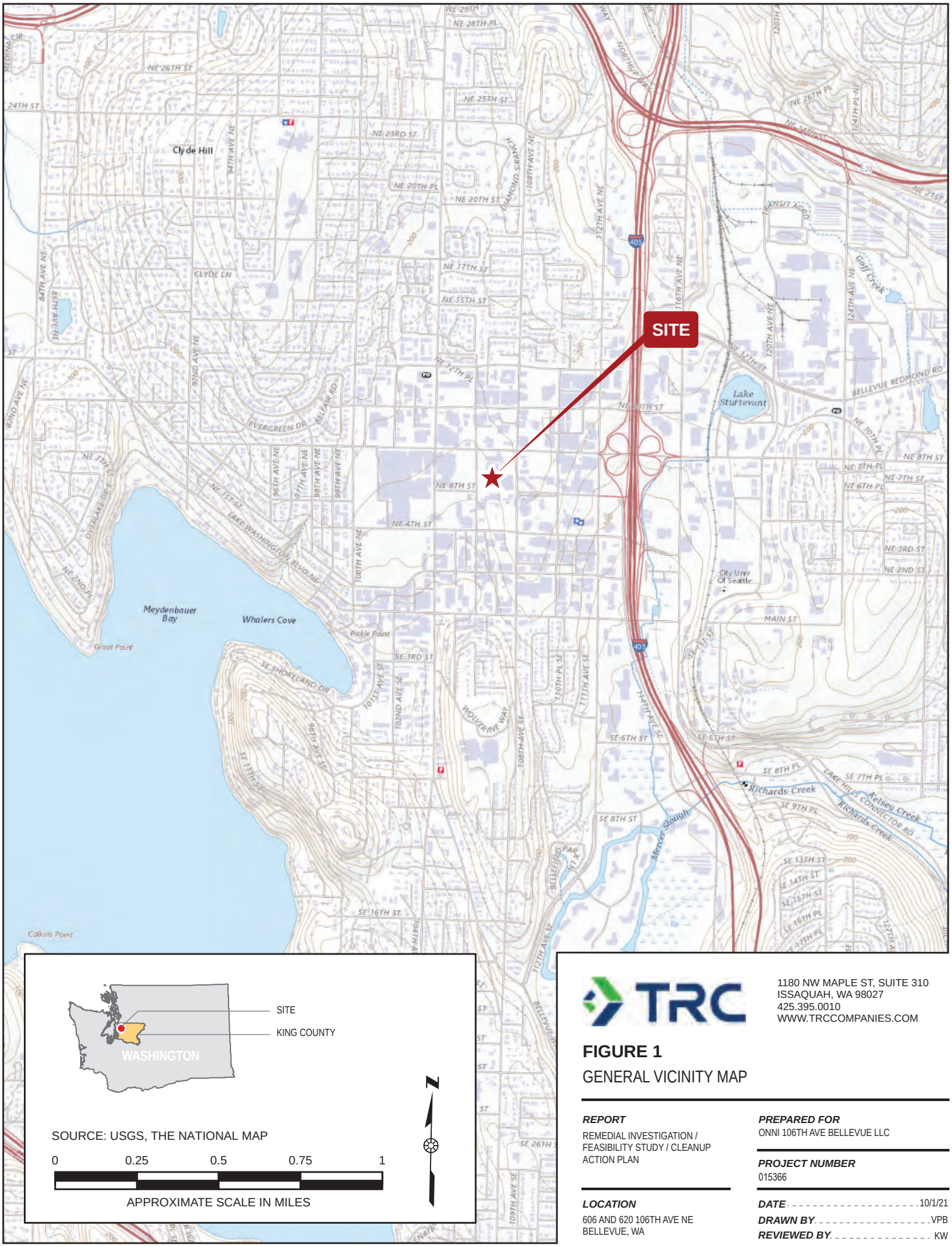


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FIGURE 1

GENERAL VICINITY MAP

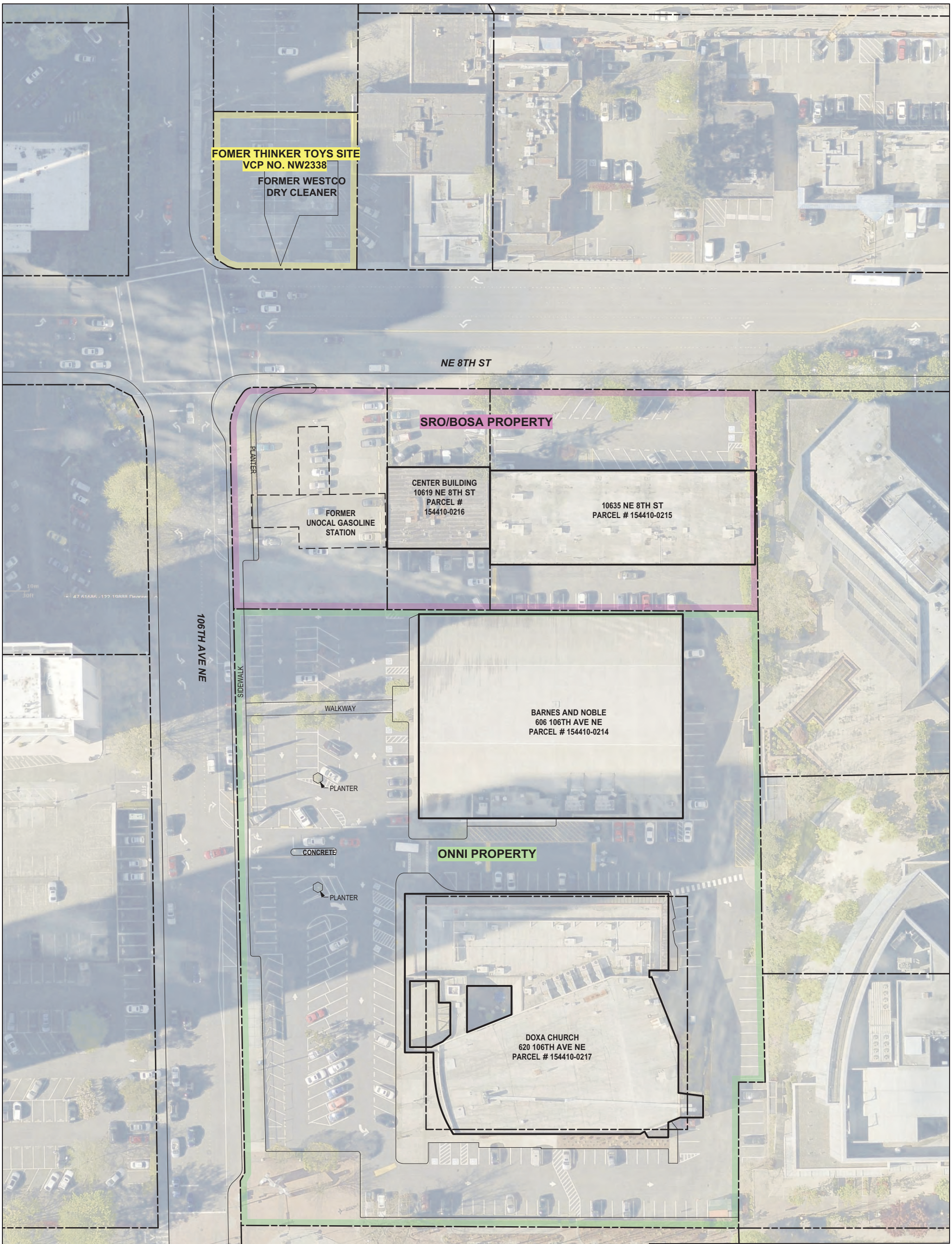
REPORT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY / CLEANUP ACTION PLAN

LOCATION
606 AND 620 106TH AVE NE
BELLEVUE, WA

PREPARED FOR
ONNI 106TH AVE BELLEVUE LLC

PROJECT NUMBER
015366

DATE 10/1/21
DRAWN BY VPB
REVIEWED BY KW



NOTES:

APPROXIMATE PARCEL BOUNDARY (KING COUNTY)

NOTE: FIGURE DERIVED FROM GEOENGINEERS RI-FS AND CAP FIGURE SETS, URS SUPPLEMENTAL DATA GAP INVESTIGATION, GOOGLE EARTH IMAGERY, AND KING COUNTY IMAGERY AND GIS DATA.

0 17.5 35 70

SCALE: 1" = 70'

N

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FIGURE 2

SITE REPRESENTATION

REPORT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY / CLEANUP ACTION PLAN

LOCATION
606 AND 620 106TH AVE NE
BELLEVUE, WA

PREPARED FOR
ONNI 106TH AVE BELLEVUE LLC

PROJECT NUMBER
015366.0003.0000

DATE 10/1/21
DRAWN BY ..... VPB
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NE 8TH ST

AREA ABOVE LINE SHOWN FOR HISTORICAL REFERENCE ONLY

CENTER BUILDING
10619 NE 8TH ST
PARCEL #
154410-0216

10635 NE 8TH ST
PARCEL # 154410-0215

FORMER
UNOCAL GASOLINE
STATION

B3/MW-3
B2-MW-2
B1/MW-1
B4/MW-4
URS-MW-1
URS-MW-2
URS-MW-3
URS-SB-1
URS-SB-2
URS-SB-3
URS-SB-4
URS-SB-5
URS-SB-6
URS-SB-7
URS-SB-8
URS-SB-9
URS-SB-10
URS-SB-12
URS-SB-13
URS-SB-14
URS-SB-15
URS-SB-16
URS-SB-17
URS-SB-18
URS-SB-19
URS-SB-20
URS-SB-21
URS-SB-22
URS-SB-23
URS-SB-24
URS-SB-OP1
URS-SB-OP2
URS-SB-OP3
URS-SB-OP4
URS-SB-OP5
URS-SB-OP6
URS-SB-OP7
URS-SB-OP8
MW-17
MW-18
MW-19
MW-20
HC-1
HC-2
HC-3
SRO-1
SRO-2
SRO-3
SRO-4
SRO-5
SRO-6
SRO-7
SRO-8
SRO-9
SRO-10
SRO-12
SRO-13
SRO-14
SRO-15
SRO-16
SRO-17
SRO-18
SRO-19
SRO-21

SB-16 (URS-MW-7D & 7I)
0.727 - 60'
0.772 - 65'

URS-SB-13
0.0647 - 60'
0.0861 - 65'

URS-MW-4
0.17 - 12.5'
0.12 - 30'

URS-MW-8(SB-11)
URS-MW-5
URS-MW-6
URS-MW-7

TH17-01
TH17-02
MW17-01
0.033 - 60'
0.30 - 65'

TH17-03
TH17-04
MW17-02
TH17-05
MW17-03
TH17-06
TH17-07
DH17-01
TH17-08
MW17-04

ESTIMATED EXTENT OF PCE IMPACTS TO SHALLOW SOIL (5' - 35' BGS)
~2,500 YDS³

ESTIMATED EXTENT OF PCE IMPACTS TO DEEP SOIL (50' - 70' BGS)
~10,000 YDS³

ESTIMATED EXTENT OF PCE IMPACTS > 0.02 mg/kg

BARNES AND NOBLE
606 106TH AVE NE
PARCEL # 154410-0214

DOXA CHURCH
620 106TH AVE NE
PARCEL # 154410-0217

106TH AVE NE
SIDEWALK
WALKWAY
PLANTER
CONCRETE
STOP

A
A'

N
0 12.5 25 50
SCALE: 1" = 50'

NOTES:

APPROXIMATE PARCEL BOUNDARY (KING COUNTY)

SOIL BORING LOCATION

MONITORING WELL LOCATION

DEEP MONITORING WELL LOCATION

INDICATES THAT TETRACHLOROETHENE (PCE) WAS DETECTED IN SOIL AT A CONCENTRATION GREATER THAN CLEANUP LEVEL (CUL)

INDICATES THAT PCE WAS DETECTED IN SOIL AT A CONCENTRATION LESS THAN CUL BUT GREATER THAN 0.02 mg/kg

INDICATES THAT PCE WAS DETECTED IN SOIL AT A CONCENTRATION LESS THAN 0.02 mg/kg BUT GREATER THAN METHOD DETECTION LIMIT (MDL)

EXPLORATION LOCATION (2017)
TH = TEST HOLE, **MW** = MONITORING WELL, **DH** = DOWNHOLE SHEARWAVE VOLOCITY

PCE IMPACTS TO SHALLOW SOIL, DASHED AND QUERIED WHERE INFERRED

PCE IMPACTS TO DEEP SOIL DASHED AND QUERIED WHERE INFERRED

ESTIMATED EXTENT OF PCE-IMPACTED SOIL (ON-PROPERTY)

TH17-02
MW17-01
0.033 - 60'
0.30 - 65'
SAMPLE DEPTH IN FEET BELOW GROUND SURFACE

PCE CONCENTRATIONS IN SOIL IN MILLIGRAMS PER KILOGRAM (mg/kg)
NOTE: DATA ONLY SHOWN FOR LOCATIONS AND DEPTH INTERVALS WITH DETECTABLE CONCENTRATIONS OF PCE

A A' CROSS-SECTION LOCATION

NOTE: FIGURE DERIVED FROM GEOENGINEERS RI-FS AND CAP FIGURE SETS, URS SUPPLEMENTAL DATA GAP INVESTIGATION, GOOGLE EARTH IMAGERY, AND KING COUNTY IMAGERY AND GIS DATA.

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FIGURE 3

SITE REPRESENTATION SHOWING PCE IN SOIL

REPORT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY / CLEANUP ACTION PLAN

LOCATION
606 AND 620 106TH AVE NE
BELLEVUE, WA

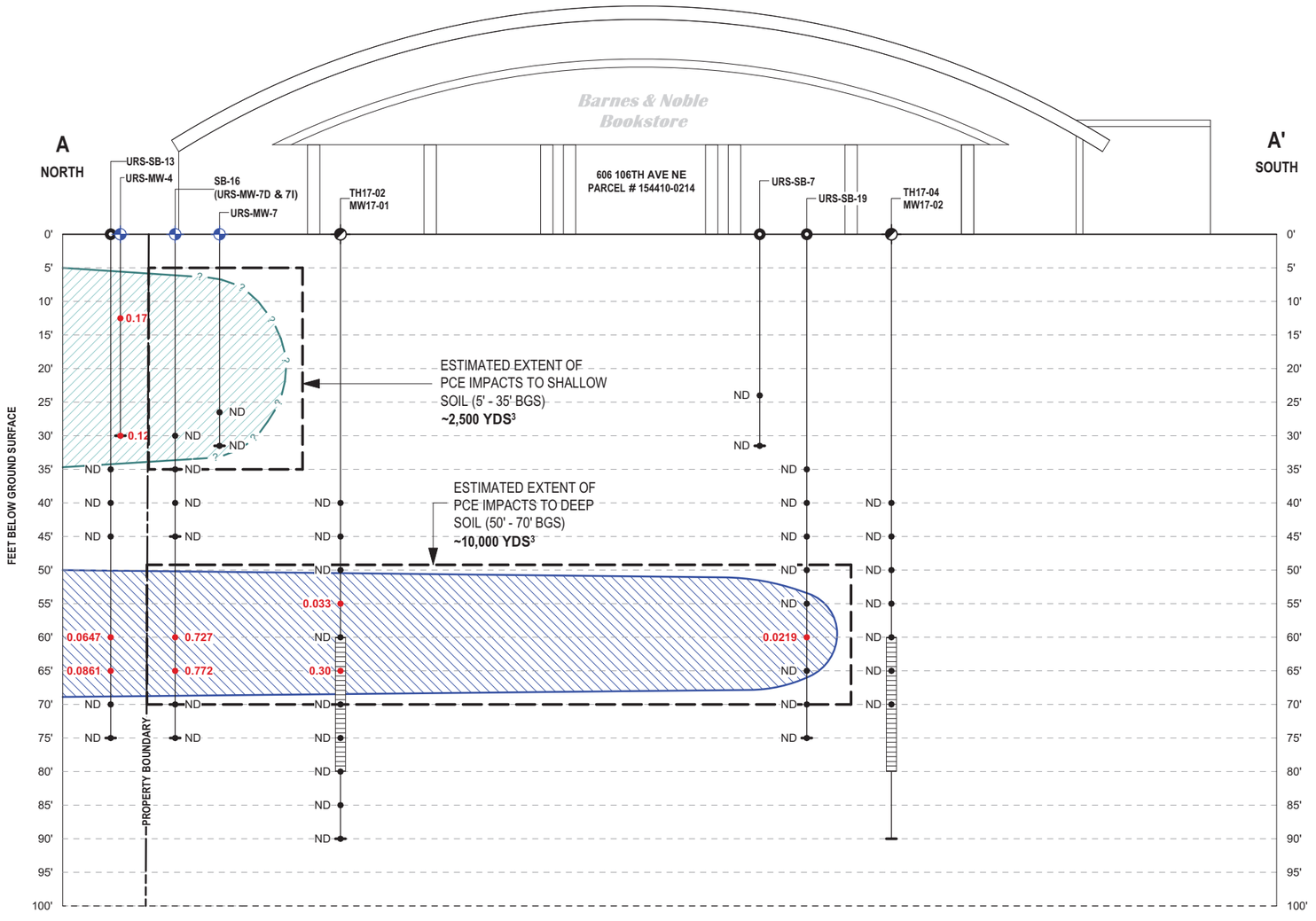
PREPARED FOR
ONNI 106TH AVE BELLEVUE LLC

PROJECT NUMBER
015366.0003.0000

DATE 10/1/21
DRAWN BY ..... VPB
REVIEWED BY ..... KW

DRAFT

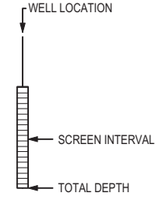
FOR REVIEW



NOTES:

- URS SOIL BORING LOCATION
- URS MONITORING WELL LOCATION
- EPI BORING/MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION
- SOIL SAMPLE LOCATION WITH TETRACHLOROETHENE (PCE) DETECTIONS GREATER THAN 0.025 MDL FOR EPA 8260C OR NON J-FLAGGED URS 2008 AND 2011 RESULTS
- ND NON-DETECT

NOTE: DATA PRESENTED IN MILLIGRAMS PER KILOGRAM (mg/kg)



- PCE IMPACTS TO SHALLOW SOIL, DASHED AND QUERRIED WHERE INFERRED
- PCE IMPACTS TO DEEP SOIL
- ESTIMATED EXTENT OF PCE IMPACTED SOIL (ON-PROPERTY)

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FIGURE 4

CROSS-SECTION A-A'

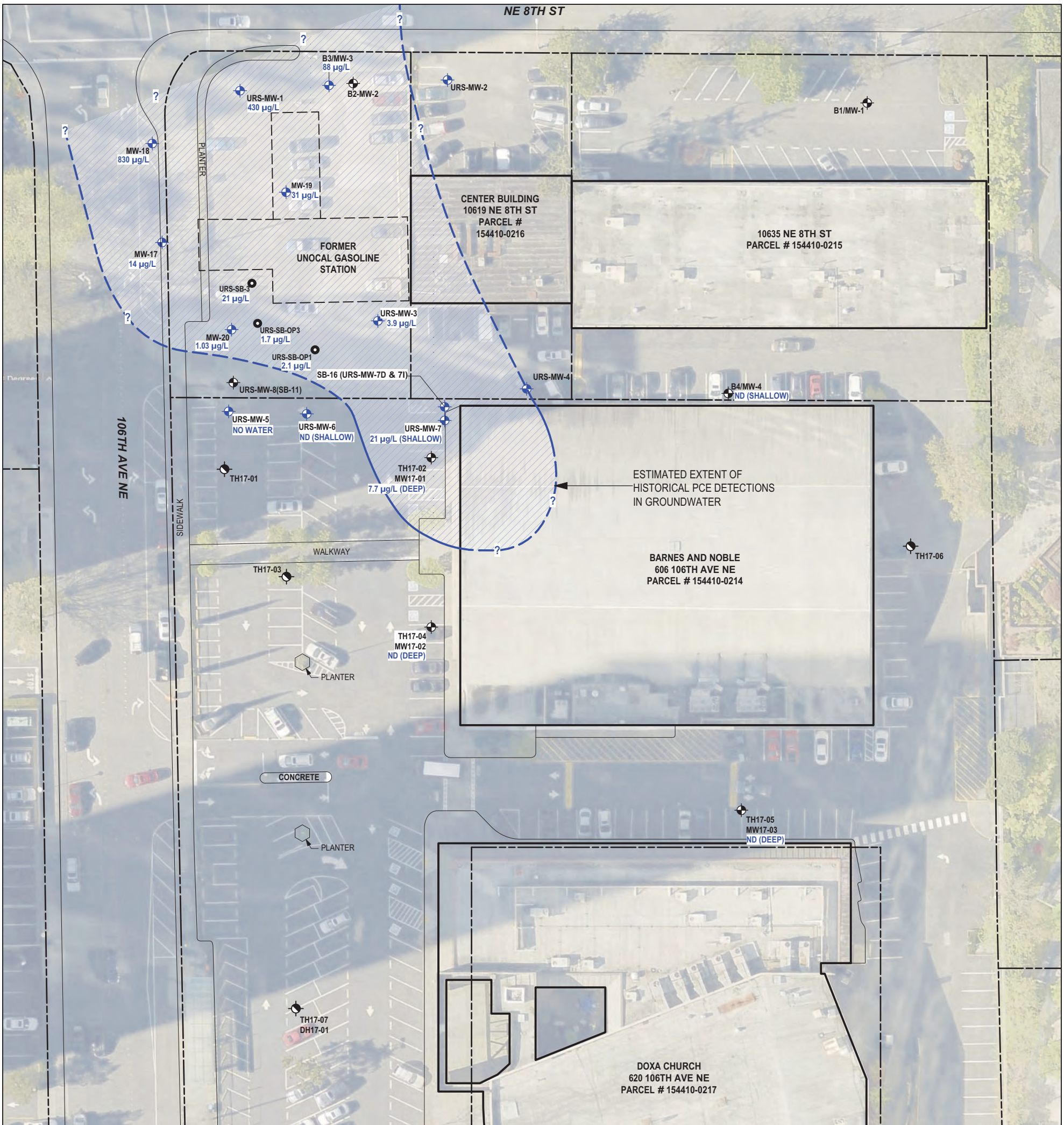
REPORT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY / CLEANUP ACTION PLAN

LOCATION
606 AND 620 106TH AVE NE BELLEVUE, WA

PREPARED FOR
ONNI 106TH AVE BELLEVUE LLC

PROJECT NUMBER
015366

DATE 10/1/21
DRAWN BY ..... VPB
REVIEWED BY ..... KW



Sample ID	Lab Report	Depth to Water (in feet)	Aquifer	Sample Date	Volatile Organic Compounds[a]				
					Tetrachloro-ethene (PCE)	Trichloro-ethene (TCE)	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Vinyl Chloride
B4/MW-4	711271	74.66	Deep	11/14/2017	<1	<1	<1	<1	<0.2
URS-MW-5	--	0.20	Shallow	--	--	--	--	--	--
URS-MW-6	711271	42.36	Shallow	11/14/2017	<1	<1	<1	<1	<0.2
URS-MW-7	711271	34.22	Shallow	11/14/2017	**21**	<1	**1.6**	<1	<0.2
MW17-01:20171115	711298	69.4	Deep	11/15/2017	**7.7**	<1	<1	<1	<0.2
MW17-02:20171115	711298	69.59	Deep	11/15/2017	<1	<1	<1	<1	<0.2
MW17-03:20171115	711298	72.15	Deep	11/15/2017	<1	<1	<1	<1	<0.2
MTCA Method A Groundwater Cleanup Level[b]					**5**	**5**	**16[c]**	**160[c]**	**0.2**

Notes:
All results presented in micrograms per liter (µg/L).
Bold Bold results indicate that the compound was detected.
Shaded cells indicate that the compound was detected at a concentration greater than cleanup levels.
a Analyzed by EPA Method 8260C.
b Model Toxics Control Act (MTCA) Method A Groundwater Cleanup Levels, Washington Administrative Code (WAC) 173-340-900, Table 720-1, unless otherwise noted.
c MTCA Method B Groundwater Cleanup Levels from Cleanup Levels and Risk Calculations (CLARC) database.
-- Sample not collected - insufficient water.

NOTES:

APPROXIMATE PARCEL BOUNDARY (KING COUNTY)

MONITORING WELL LOCATION

DEEP MONITORING WELL LOCATION

EXPLORATION LOCATION
TH = TEST HOLE, **MW** = MONITORING WELL, **DH** = DOWNHOLE SHEARWAVE VOLOCITY

ND NON-DETECT

TH17-02
MW17-01
21 µg/L (SHALLOW) — INDICATES THE AQUIFER (SHALLOW OR DEEP)
PCE CONCENTRATIONS IN GROUNDWATER IN MICROGRAMS PER LITER (µg/L)

EXTENT OF HISTORICAL PCE AT A CONCENTRATION GREATER THAN METHOD DETECTION LIMIT IN GROUNDWATER. DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN

NOTE: FIGURE DERIVED FROM GEOENGINEERS RI-FS AND CAP FIGURE SETS, URS SUPPLEMENTAL DATA GAP INVESTIGATION, GOOGLE EARTH IMAGERY, AND KING COUNTY IMAGERY AND GIS DATA.

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FIGURE 5

SITE REPRESENTATION SHOWING HISTORICAL PCE IN GROUNDWATER

REPORT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY / CLEANUP ACTION PLAN

LOCATION
606 AND 620 106TH AVE NE
BELLEVUE, WA

PREPARED FOR
ONNI 106TH AVE BELLEVUE LLC

PROJECT NUMBER
015366.0003.0000

DATE 10/1/21
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Primary Sources	Contaminants of Potential Concern	Media of Concern	Transport Mechanisms	Exposure Media	Exposure Pathway	Current (C) and Potential Future (F) Receptors: Commercial Industrial	Construction Worker	Residential/ Recreational	TEE Receptors
Upgradient sources of Contaminants of Concern - Thinker Toys Site	Tetrachloroethene (PCE), Trichloroethane (TCE), cis-1,2-Dichloroethene (cis-1,2-DCE), trans-1,2-DCE, and Vinyl Chloride (VC)	☐ Surface Soil (0–2 feet bgs)	☐ Direct release to soil ☐ Migration to subsurface soil ☐ Migration to groundwater ☐ Volatilization ☐ Runoff or erosion ☐ Uptake by plant or animal ☐ Other (list) _____	☒ Soil	☒ Ingestion ☒ Dermal Exposure		X X		
		☒ Soil (> 2 feet bgs)	☒ Direct release to soil ☒ Migration to groundwater ☒ Volatilization ☐ Other (list) _____	☒ Groundwater	☒ Ingestion ☒ Dermal Exposure		X X		
		☒ Groundwater	☒ Release to groundwater ☒ Volatilization ☐ Future migration to surface water ☐ Future migration to sediment ☐ Uptake by plant or animal ☐ Other (list) _____	☒ Air	☒ Inhalation		X		
	☒ Adsorbed onto soil ☒ Dissolved in water ☐ Non-aqueous phase	☐ Surface Water	☐ Release to surface water ☐ Volatilization ☐ Sedimentation ☐ Uptake by plant or animal ☐ Other (list) _____	☐ Surface Water	☐ Ingestion ☐ Dermal Contact				
		☐ Sediment	☐ Release to surface water ☐ Resuspension or erosion ☐ Uptake by plant or animal ☐ Other (list) _____	☐ Sediment	☐ Ingestion ☐ Dermal Contact				
				☐ Indoor Air	☐ Inhalation				

NOTES:
bgs = below ground surface

FIGURE 6
CONCEPTUAL SITE MODEL

PREPARED BY	TRC		
REPORT	Remedial Investigation / Feasibility Study / Cleanup Action Plan		
LOCATION	606 & 620 106th Avenue Northeast Bellevue, Washington 98004		
PREPARED FOR	Onni 106th Ave Bellevue LLC		
DATE 09/23/2021	***DRAWN BY*** *K. Woodburne*	***REVIEWED BY*** *T. Morin*	***PROJECT NUMBER*** 015366.0003.0000

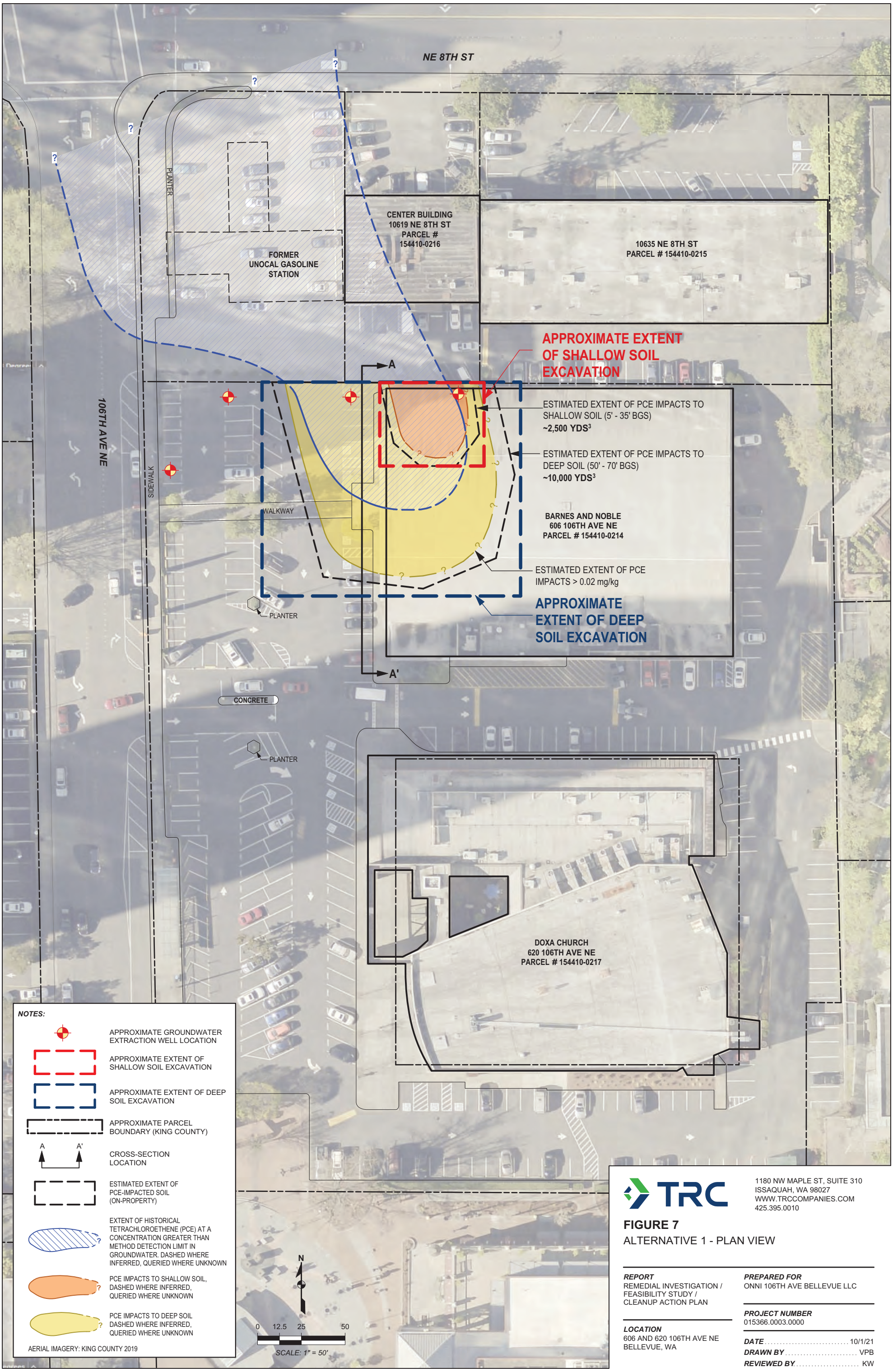

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FIGURE 7

ALTERNATIVE 1 - PLAN VIEW

REPORT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY / CLEANUP ACTION PLAN

LOCATION
606 AND 620 106TH AVE NE
BELLEVUE, WA

PREPARED FOR
ONNI 106TH AVE BELLEVUE LLC

PROJECT NUMBER
015366.0003.0000

DATE 10/1/21
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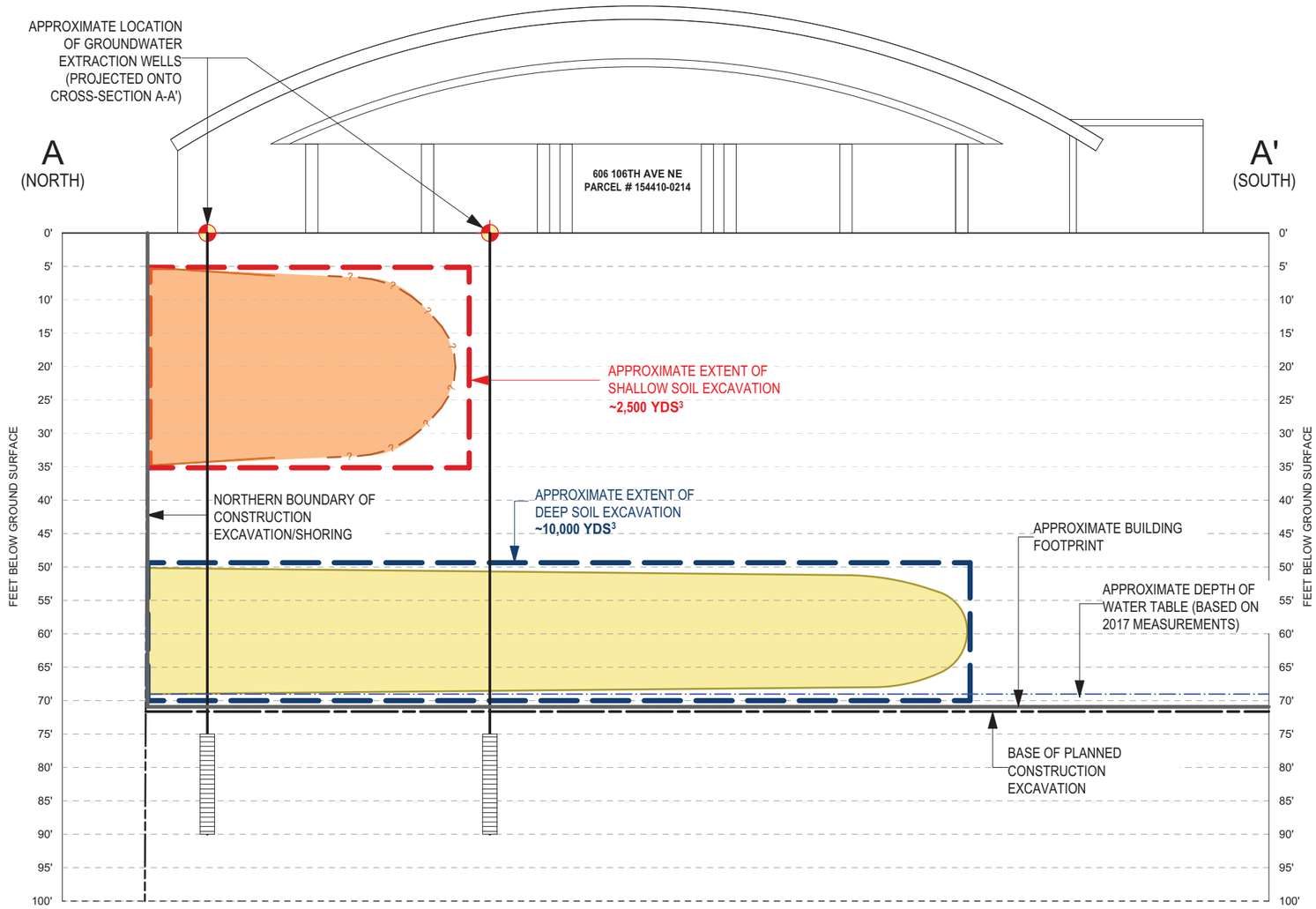

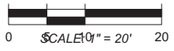

NOTES:

- APPROXIMATE PARCEL BOUNDARY (KING COUNTY)
- APPROXIMATE BUILDING FOOTPRINT
- TETRACHLOROETHENE (PCE) IMPACTS TO SHALLOW SOIL, DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN
- PCE IMPACTS TO DEEP SOIL DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN

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FIGURE 8

ALTERNATIVE 1 - CROSS-SECTION A-A'

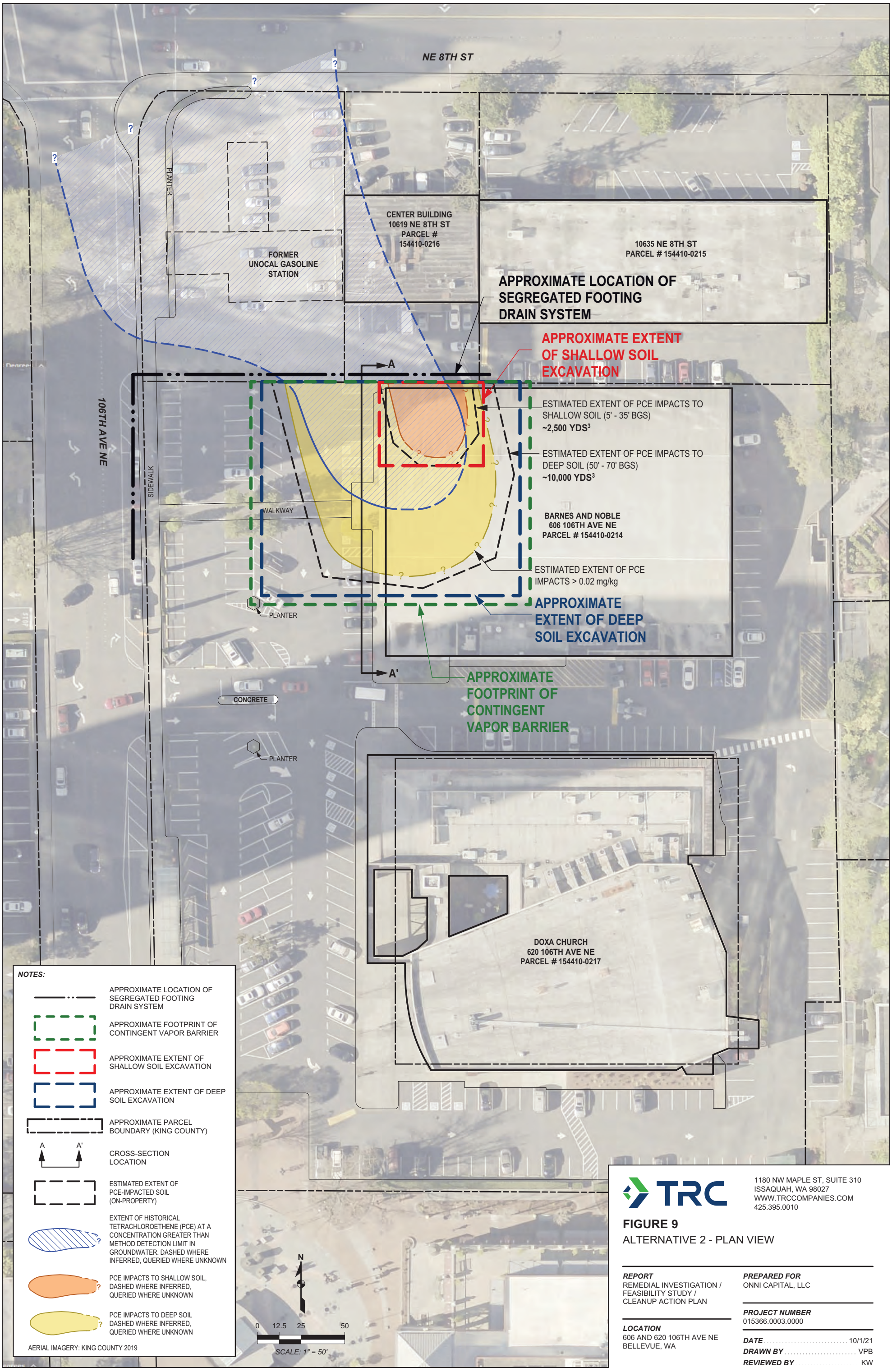
REPORT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY / CLEANUP ACTION PLAN

LOCATION
606 AND 620 106TH AVE NE BELLEVUE, WA

PREPARED FOR
ONNI 106TH AVE BELLEVUE LLC

PROJECT NUMBER
015366.0003.0000

DATE 10/1/21
DRAWN BY ..... VPB
REVIEWED BY ..... KW



NOTES:

- APPROXIMATE LOCATION OF SEGREGATED FOOTING DRAIN SYSTEM
- APPROXIMATE FOOTPRINT OF CONTINGENT VAPOR BARRIER
- APPROXIMATE EXTENT OF SHALLOW SOIL EXCAVATION
- APPROXIMATE EXTENT OF DEEP SOIL EXCAVATION
- APPROXIMATE PARCEL BOUNDARY (KING COUNTY)
- A — A' CROSS-SECTION LOCATION
- ESTIMATED EXTENT OF PCE-IMPACTED SOIL (ON-PROPERTY)
- EXTENT OF HISTORICAL TETRACHLOROETHENE (PCE) AT A CONCENTRATION GREATER THAN METHOD DETECTION LIMIT IN GROUNDWATER. DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN
- PCE IMPACTS TO SHALLOW SOIL, DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN
- PCE IMPACTS TO DEEP SOIL DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN

AERIAL IMAGERY: KING COUNTY 2019

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FIGURE 9
ALTERNATIVE 2 - PLAN VIEW

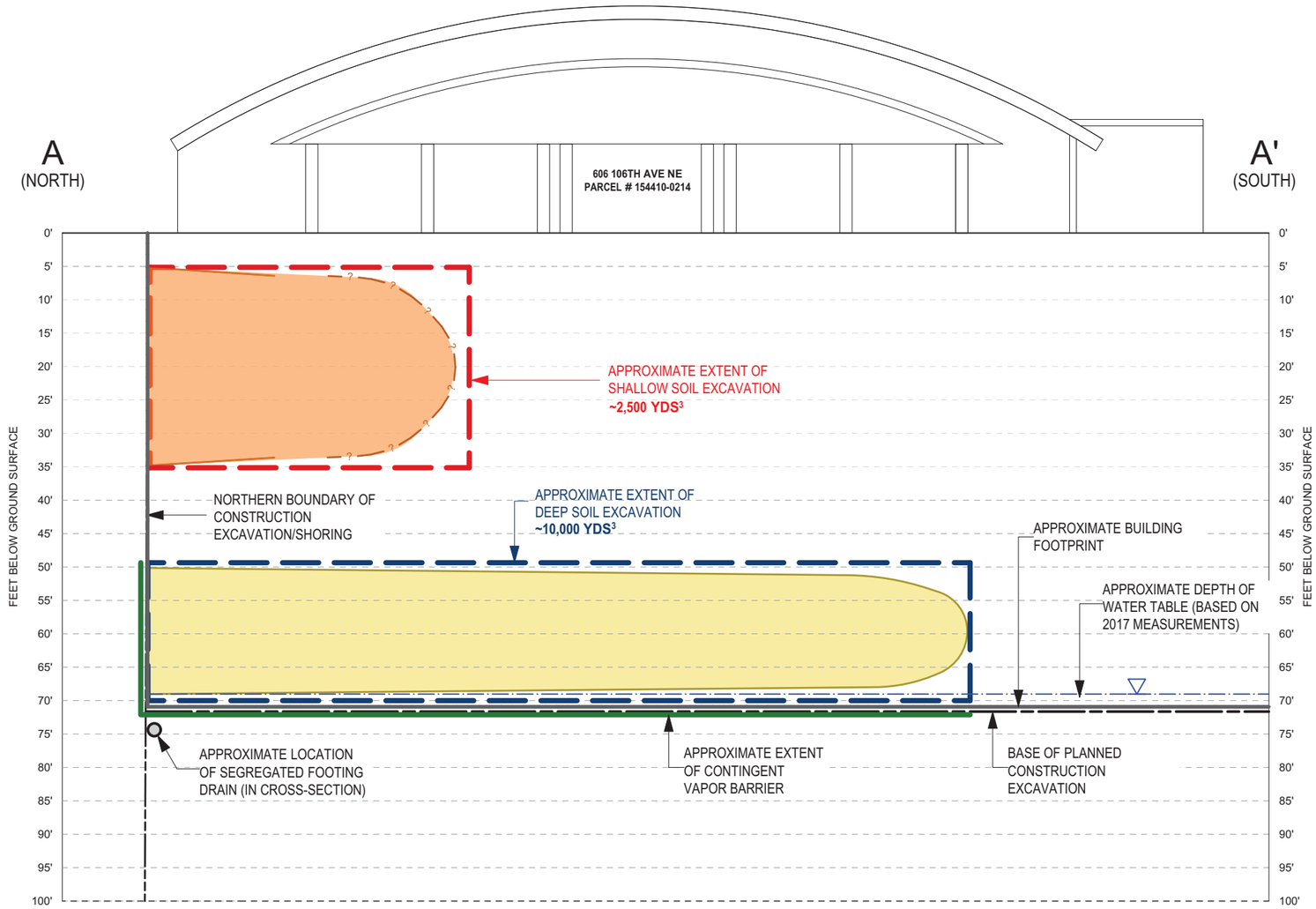
REPORT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY / CLEANUP ACTION PLAN

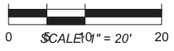
LOCATION
606 AND 620 106TH AVE NE
BELLEVUE, WA

PREPARED FOR
ONNI CAPITAL, LLC

PROJECT NUMBER
015366.0003.0000

DATE 10/1/21
DRAWN BY ..... VPB
REVIEWED BY ..... KW





NOTES:

- APPROXIMATE PARCEL BOUNDARY (KING COUNTY)
- APPROXIMATE BUILDING FOOTPRINT
- TETRACHLOROETHENE (PCE) IMPACTS TO SHALLOW SOIL, DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN
- PCE IMPACTS TO DEEP SOIL DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN

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FIGURE 10

ALTERNATIVE 2 - CROSS-SECTION A-A'

REPORT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY / CLEANUP ACTION PLAN

LOCATION
606 AND 620 106TH AVE NE
BELLEVUE, WA

PREPARED FOR
ONNI 106TH AVE BELLEVUE LLC

PROJECT NUMBER
015366.0003.0000

DATE 10/1/21
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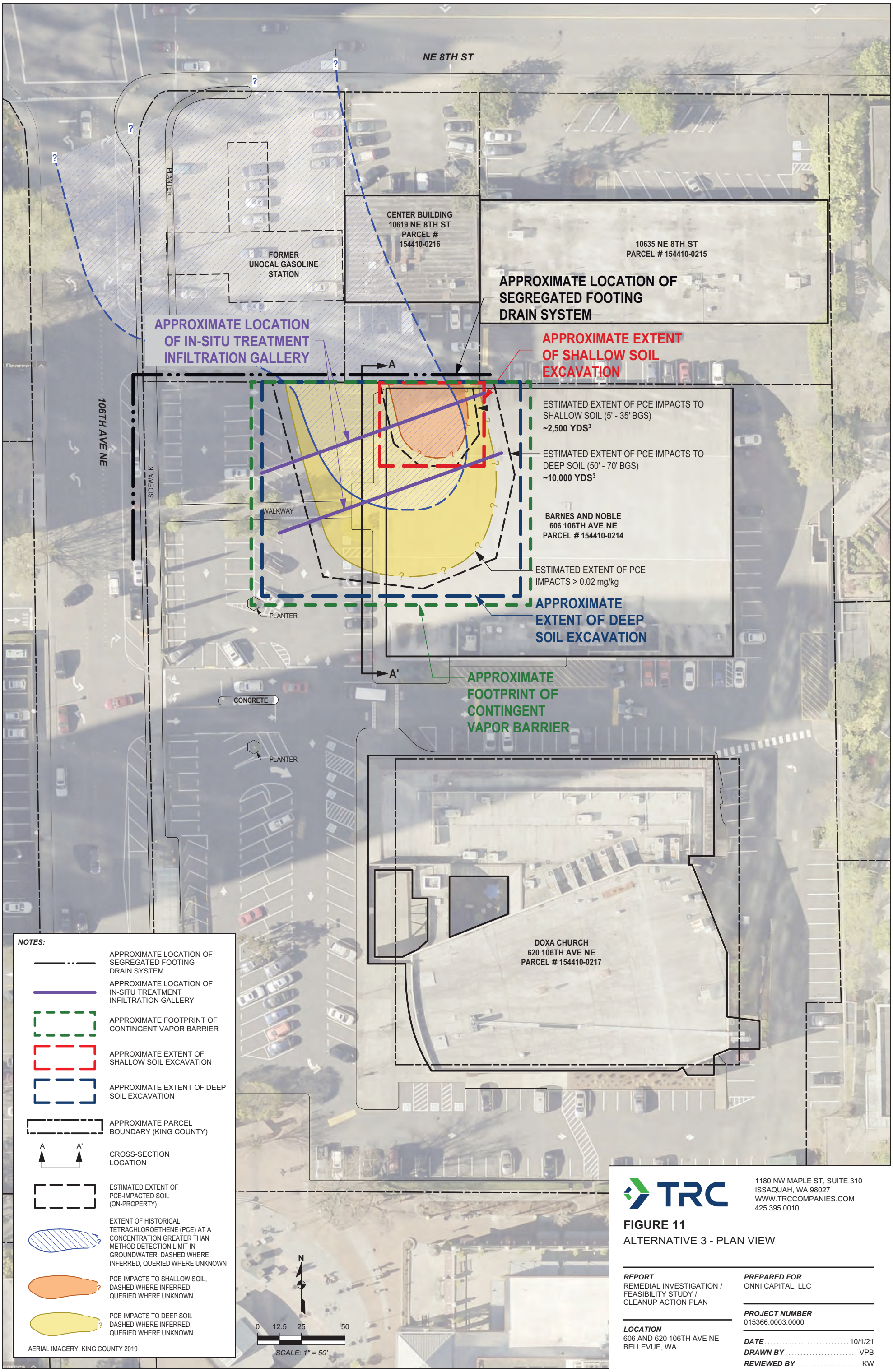

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FIGURE 11

ALTERNATIVE 3 - PLAN VIEW

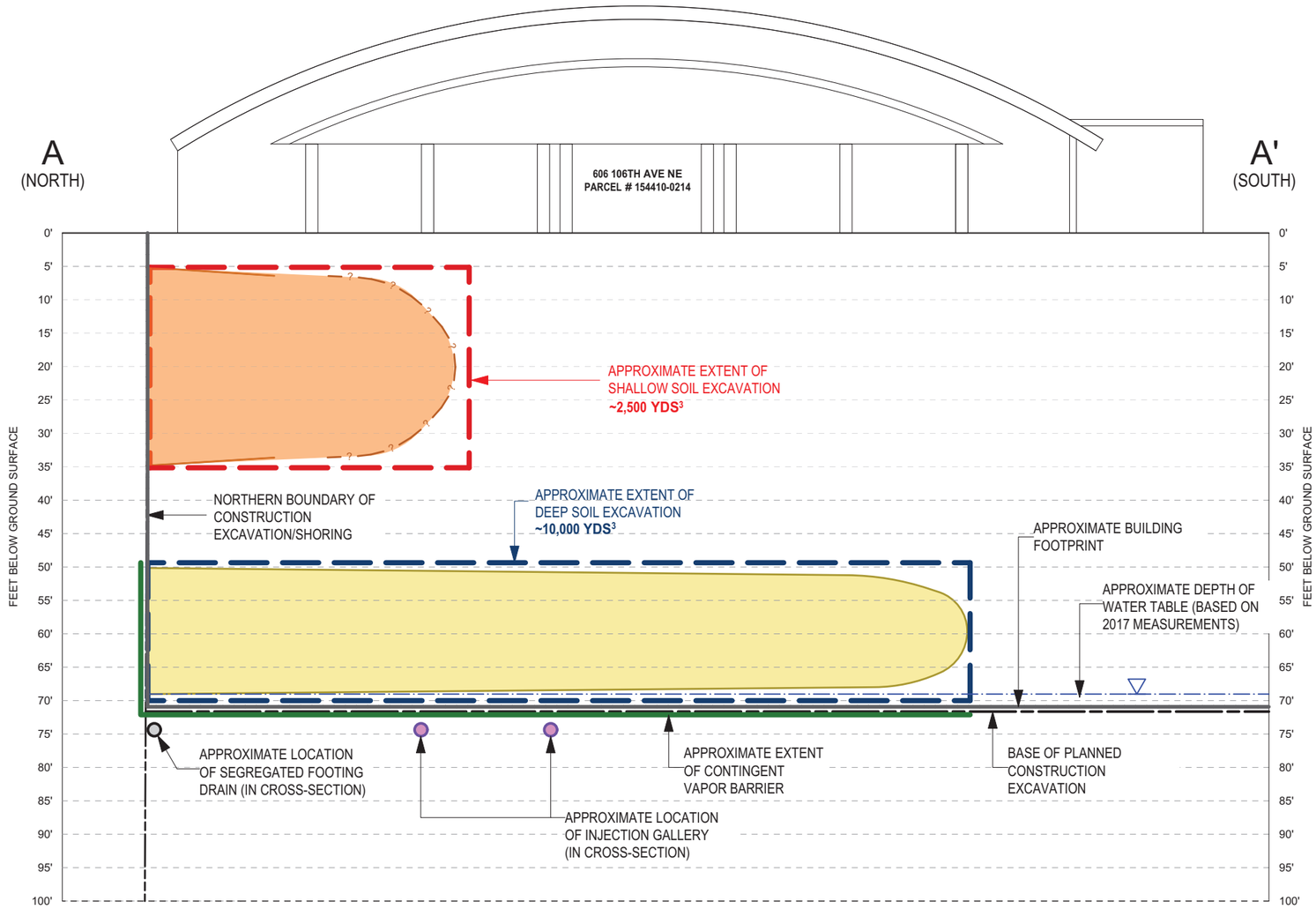
REPORT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY / CLEANUP ACTION PLAN

LOCATION
606 AND 620 106TH AVE NE
BELLEVUE, WA

PREPARED FOR
ONNI CAPITAL, LLC

PROJECT NUMBER
015366.0003.0000

DATE 10/1/21
DRAWN BY ..... VPB
REVIEWED BY ..... KW



0 SCALE: 1" = 20' 20

NOTES:

- APPROXIMATE PARCEL BOUNDARY (KING COUNTY)
- APPROXIMATE BUILDING FOOTPRINT
- TETRACHLOROETHENE (PCE) IMPACTS TO SHALLOW SOIL, DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN
- PCE IMPACTS TO DEEP SOIL DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN

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FIGURE 12

ALTERNATIVE 3 - CROSS-SECTION A-A'

REPORT
REMEDIAL INVESTIGATION / FEASIBILITY STUDY / CLEANUP ACTION PLAN

LOCATION
606 AND 620 106TH AVE NE
BELLEVUE, WA

PREPARED FOR
ONNI 106TH AVE BELLEVUE LLC

PROJECT NUMBER
015366.0003.0000

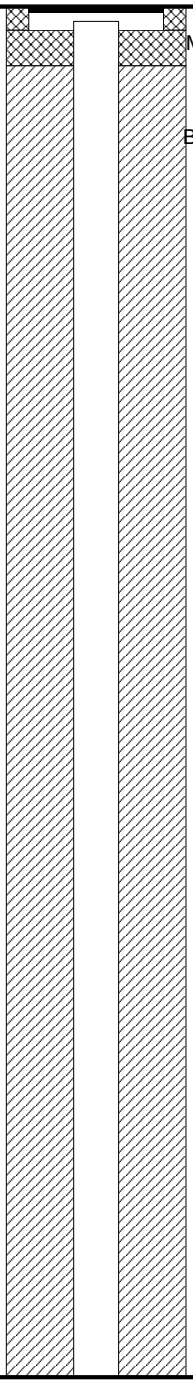
DATE 10/1/21
DRAWN BY ..... VPB
REVIEWED BY ..... KW

Attachment A
Soil Boring Logs and Well Completion Details

BORING ID: TH17-02 (MW17-01)

SITE ADDRESS	CLIENT:	CASING MATERIAL AND SIZE:
626 106th Ave NE, Bellevue, WA	**Onni Group**	**Sch. 40 PVC**
DRILLING CONTRACTOR:	PROJECT #:	SCREEN SIZE:
Holt Services, Inc.	**65603**	**0.010" Slot**
DRILLING EQUIPMENT:	DATE:	SCREEN INTERVAL:
RotoSonic Drill Rig	**11/7/2017**	**60'-80' bgs**
DRILLING METHOD:	GROUND SURFACE ELEV. FT AMSL:	FILTER PACK:
RotoSonic	**Not Measured**	**Colorado Silica Sand**
LOGGED BY: / BOREHOLE SIZE:	TOTAL DEPTH:	FILTER PACK INTERVAL:
E. Webber-Bruya / **6" Diameter**	**90' bgs**	**60'-80' bgs**

Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery	Blows per 6"	Sample	PID (ppm)
0		Asphalt Surface				
	SP	POORLY-GRADED SAND; dry; medium dense; poorly-graded fine to medium-grained sand with few gravel and trace silt				
10		WELL-GRADED SAND; damp; medium dense; well-graded sand, few gravel, trace silt				
25		27' Few silt				
30	SW					
40		40' Increase to some gravel, trace silt, several large pebbles	30	26, 50/6"	MW17-01-40	0.0
45			30	28, 50/6"	MW17-01-45	0.1



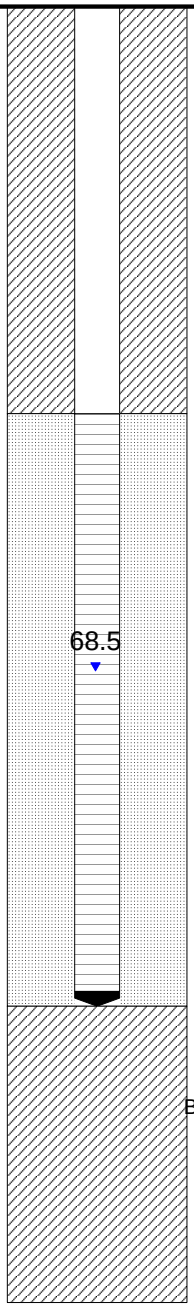
NOTES:

TRC

BORING ID: TH17-02 (MW17-01)

SITE ADDRESS	CLIENT:	CASING MATERIAL AND SIZE:
626 106th Ave NE, Bellevue, WA	**Onni Group**	**Sch. 40 PVC**
DRILLING CONTRACTOR:	PROJECT #:	SCREEN SIZE:
Holt Services, Inc.	**65603**	**0.010" Slot**
DRILLING EQUIPMENT:	DATE:	SCREEN INTERVAL:
RotoSonic Drill Rig	**11/7/2017**	**60'-80' bgs**
DRILLING METHOD:	GROUND SURFACE ELEV. FT AMSL:	FILTER PACK:
RotoSonic	**Not Measured**	**Colorado Silica Sand**
LOGGED BY: / BOREHOLE SIZE:	TOTAL DEPTH:	FILTER PACK INTERVAL:
E. Webber-Bruya / **6" Diameter**	**90' bgs**	**60'-80' bgs**

Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery	Blows per 6"	Sample	PID (ppm)
50	GW	WELL-GRADED GRAVEL WITH SAND; gray to brown; moist; medium dense; well-graded gravel with some coarse sand, trace silt	5	50/6"	MW17-01-50	0.2
55			15	50/6"	MW17-01-55	1.3
60	SP	POORLY-GRADED SAND; brown; moist; dense; poorly-graded fine sand	60	34, 27, 9	MW17-01-60	1.2
65	SM	SILTY SAND; gray; damp; very dense	100	10, 31, 18	MW17-01-65	0.0
	SP	POORLY-GRADED SAND; brown; moist; poorly-graded medium-grained sand 68.5' Gray; fine-grained sand; wet; dense				
70		70' Coarse-grained sand; brown	100	16, 32, 48	MW17-01-70	0.0
75			60		MW17-01-75	0.0
80			100		MW17-01-80	0.0
85		85' Minor silt	10	1, 2, 4	MW17-01-85	0.0
90		End of Borehole	20		MW-17-01-90	0.0



NOTES:

BORING ID: TH17-03

SITE ADDRESS **626 106th Ave NE, Bellevue, WA**	CLIENT: **Onni Group**
DRILLING CONTRACTOR: **Holt Services, Inc.**	PROJECT #: **65603**
DRILLING EQUIPMENT: **RotoSonic Drill Rig**	DATE: **11/13/2017**
DRILLING METHOD: **RotoSonic**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**
LOGGED BY: **C. McFadden**	TOTAL DEPTH: **90' bgs**

DECOMMISSIONING MATERIAL: **Hydrated Bentonite Chips**

BOREHOLE SIZE: **6" Diameter**

Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery	Blows per 6"	Sample	PID (ppm)	Comments
0		Asphalt Surface					
	SW	WELL-GRADED SAND; light brown; dry; mostly fine to coarse sand with few fine gravel; no odor				3.5	
5			100			3.1	
	ML	SANDY SILT; gray; dry; mostly silt with some fine sand; no odor				4.3	
		9' Few gravel				7.2	
10						0.0	
						0.0	
15		GRAVELLY SILT; gray; dry; mostly silt with some coarse gravel and few fine sand; no odor	100			113.0	
						196.0	
20					TH17-03-20	221.0	
	ML	22'-25' Moist				4.0	
25			100			4.0	
						5.5	
30					TH17-03-30	8.9	
		31' Increasing sand content					
		SILTY SAND WITH GRAVEL; gray; damp; mostly fine to medium sand with some gravel and minor silt				0.0	
35			100			0.0	
	SM					0.0	
		39' Moisture increases to wet					
40					TH17-03-40	0.0	
		41' Decreased moisture					
		WELL-GRADED GRAVEL; gray; damp; mostly fine to coarse gravel with few sand and trace silt; no odor	100			4.8	
45			33		TH17-03-45	12.8	

NOTES: Samples at 20' bgs and 30' bgs were collected from the soil bag. Samples at 40' bgs and 45' bgs were collected via SPT.

TRC	BORING ID: TH17-03	
SITE ADDRESS **626 106th Ave NE, Bellevue, WA**	CLIENT: **Onni Group**	
DRILLING CONTRACTOR: **Holt Services, Inc.**	PROJECT #: **65603**	
DRILLING EQUIPMENT: **RotoSonic Drill Rig**	DATE: **11/13/2017**	
DRILLING METHOD: **RotoSonic**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	DECOMMISSIONING MATERIAL: **Hydrated Bentonite Chips**
LOGGED BY: **C. McFadden**	TOTAL DEPTH: **90' bgs**	BOREHOLE SIZE: **6" Diameter**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	Blows per 6"	Sample	PID (ppm)	Comments
50	GW	50' Dry	100	50/6"	TH17-03-50	5.5	
			33	50/5"		4.7	
55	ML	SANDY SILT; light brown; damp; mostly silt with some fine sand; low plasticity; no odor Rusting in bottom 4" of sampler	100			7.8	
			100	1, 12, 34	TH17-03-55	8.0	
60			100			2.2	
			100	5, 14, 15	TH17-03-60	1.3	
65		64' Moist	100			1.7	
	SP	POORLY-GRADED SAND; brown; moist; mostly fine sand with trace silt	66	21, 50/5"	TH17-03-65	0.3	
70		68' Wet ▼	100			0.0	
		71' Increased silt content	100	11, 21, 37	TH17-03-70	0.0	
75	SM	SILTY SAND; brown; wet; mostly fine sand with minor silt; no odor	100			0.0	
			100	12, 23, 29	TH17-03-75	0.0	
80	ML	SANDY SILT; gray; wet; mostly silt with some fine sand; medium plasticity; no odor	100			0.0	
			100	9, 19, 43	TH17-03-80	0.0	
85			100			0.0	
			100	9, 16, 27	TH17-03-85	0.3	
90			100			0.0	
					TH17-03-90	0.0	

End of Borehole

NOTES: Samples at 20' bgs and 30' bgs were collected from the soil bag. Samples at 40' bgs and 45' bgs were collected via SPT.

BORING ID: TH17-04 (MW17-02)

SITE ADDRESS **626 106th Ave NE, Bellevue, WA**	CLIENT: **Onni Group**	CASING MATERIAL AND SIZE: **2" Sch. 40 PVC**
DRILLING CONTRACTOR: **Holt Services, Inc.**	PROJECT #: **65603**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **RotoSonic Drill Rig**	DATE: **11/10/2017**	SCREEN INTERVAL: **60'-80' bgs**
DRILLING METHOD: **RotoSonic**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Colorado Silica Sand**
LOGGED BY: **E. Webber-Bruya** / BOREHOLE SIZE: **6" Diameter**	TOTAL DEPTH: **90' bgs**	FILTER PACK INTERVAL: **57'-80' bgs**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	Blows per 6"	Sample	PID (ppm)	Well Construction
0		Asphalt Surface					Well Monument Set in Concrete
	SP	POORLY-GRADED SAND; gray to brown; dry; medium dense; poorly-graded sand, few gravel, few to trace silt					Hydrated Bentonite Chips
5							
10		WELL-GRADED SAND; brown; dry to damp; medium dense; well-graded sand, trace gravel, few silt					Well Casing
15							
20							
25	SW						
30		30' Increase to few silt					
35							
	SP	POORLY-GRADED SAND; gray; poorly-graded coarse-grained sand					
40	SW	WELL-GRADED SAND; brown; dry to damp; medium dense; well-graded sand, trace gravel, few silt	40	31, 50/6"	MW17-02-40		
	SP-SM	POORLY-GRADED SAND WITH SILT; gray; moist to wet; dense; poorly-graded sand with silt, few gravel					
45		WELL-GRADED GRAVEL WITH SILT AND SAND; moist; brown; well-graded gravel with	5	30/6"	MW17-02-45		

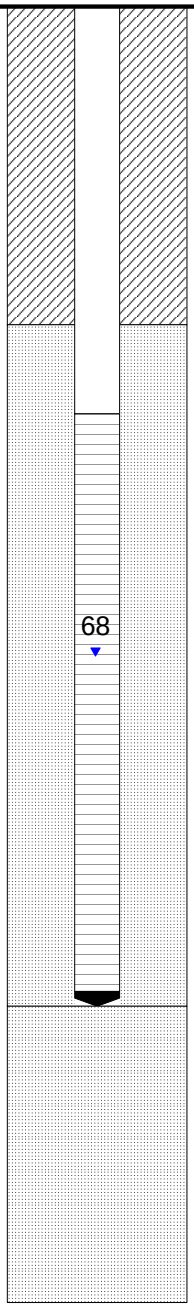
NOTES:

TRC

BORING ID: TH17-04 (MW17-02)

SITE ADDRESS	CLIENT:	CASING MATERIAL AND SIZE:
626 106th Ave NE, Bellevue, WA	**Onni Group**	**2" Sch. 40 PVC**
DRILLING CONTRACTOR:	PROJECT #:	SCREEN SIZE:
Holt Services, Inc.	**65603**	**0.010" Slot**
DRILLING EQUIPMENT:	DATE:	SCREEN INTERVAL:
RotoSonic Drill Rig	**11/10/2017**	**60'-80' bgs**
DRILLING METHOD:	GROUND SURFACE ELEV. FT AMSL:	FILTER PACK:
RotoSonic	**Not Measured**	**Colorado Silica Sand**
LOGGED BY: / BOREHOLE SIZE:	TOTAL DEPTH:	FILTER PACK INTERVAL:
E. Webber-Bruya / **6" Diameter**	**90' bgs**	**57'-80' bgs**

Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery	Blows per 6"	Sample	PID (ppm)
50	GW-GM	minor sand and few silt	5	32/6"	MW17-02-50	0.9
55	SP-SM	POORLY-GRADED SAND WITH SILT; brown; damp; moist; poorly-graded fine-grained sand with few silt	100	25, 25, 25	MW17-02-55	0.0
60			100	15, 30, 45	MW17-02-60	0.0
65	SP	POORLY-GRADED SAND; brown; damp; poorly-graded medium-grained sand	30	27, 50/6"	MW17-02-65	0.0
70	SP-SM	POORLY-GRADED SAND WITH SILT; moist to wet; poorly-graded coarse sand, few silt	100	2, 10, 19	MW17-02-70	0.1
75	SP	POORLY-GRADED SAND; gray; wet; poorly-graded very fine-grained sand, few silt 75' Increasing silt; wet	100	8, 27, 38	MW17-02-75	0.2
80			100	10, 19, 29	MW17-02-80	0.2
			100			0.0
85	ML	SANDY SILT; gray; wet; mostly silt with some fine sand; no odor	100	8, 16, 21	MW17-02-85	0.0
			100			0.0
90		End of Borehole	100	8, 14, 21	MW17-02-90	0.0



NOTES:

BORING ID: TH17-05 (MW17-03)

SITE ADDRESS **626 106th Ave NE, Bellevue, WA**	CLIENT: **Onni Group**	CASING MATERIAL AND SIZE: **Sch. 40 PVC**
DRILLING CONTRACTOR: **Holt Services, Inc.**	PROJECT #: **65603**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **RotoSonic Drill Rig**	DATE: **11/6/2017**	SCREEN INTERVAL: **75'-95' bgs**
DRILLING METHOD: **RotoSonic**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Colorado Silica Sand**
LOGGED BY: **B. Johnson/E. Webber** / BOREHOLE SIZE: **6" Diameter**	TOTAL DEPTH: **95' bgs**	FILTER PACK INTERVAL: **73'-95' bgs**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	Blows per 6"	Sample	PID (ppm)	Well Construction
0	SM	SILTY SAND; reddish brown; moist; fine to medium sand, minor silt, few fine to coarse gravel; no odor					Well Monument Set in Concrete
5							Hydrated Bentonite Chips
10							Well Casing
15							
20							
25							
30			60	17, 50/2"	MW17-03-30	0.1	
35							
40			50	5, 50/5"	MW17-03-40	0.0	
45							

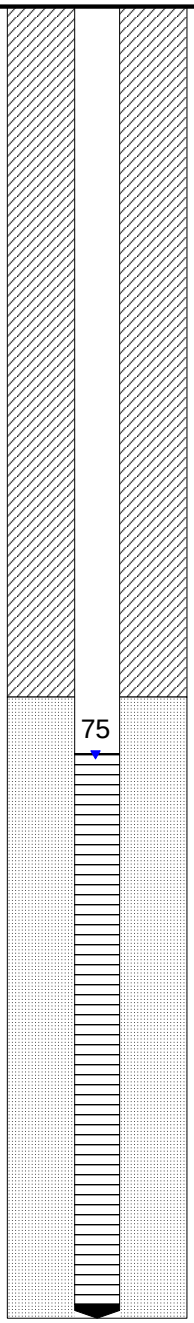
NOTES:

TRC

BORING ID: TH17-05 (MW17-03)

SITE ADDRESS **626 106th Ave NE, Bellevue, WA**	CLIENT: **Onni Group**	CASING MATERIAL AND SIZE: **Sch. 40 PVC**
DRILLING CONTRACTOR: **Holt Services, Inc.**	PROJECT #: **65603**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **RotoSonic Drill Rig**	DATE: **11/6/2017**	SCREEN INTERVAL: **75'-95' bgs**
DRILLING METHOD: **RotoSonic**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Colorado Silica Sand**
LOGGED BY: **B. Johnson/E. Webber** / BOREHOLE SIZE: **6" Diameter**	TOTAL DEPTH: **95' bgs**	FILTER PACK INTERVAL: **73'-95' bgs**

Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery	Blows per 6"	Sample	PID (ppm)
50		POORLY-GRADED SAND; reddish gray; damp; fine to medium sand, few silt, minor fine to coarse gravel; no odor	0	50/0"	MW17-03-50	0.3
55						
60	SP			16, 33, 19	MW17-03-60	0.9
65						
70				1, 5, 12	MW17-03-70	1.3
75	SM	SILTY SAND; reddish brown; moist; fine sand, minorsilt, trace fine gravel; no odor 75' Wet; no odor		2, 9, 23	MW17-03-75	0.8
80		POORLY-GRADED SAND WITH SILT; fine sand, few silt; wet			MW17-03-80	0.0
85	SP-SM				MW17-03-85	0.0
90				10, 31, 28	MW17-03-90	0.0
95		End of Borehole			MW17-03-95	



NOTES:

Attachment B
Terrestrial Ecological Evaluation

Voluntary Cleanup Program

Washington State Department of Ecology
Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION FORM

Under the Model Toxics Control Act (MTCA), a terrestrial ecological evaluation is necessary if hazardous substances are released into the soils at a Site. In the event of such a release, you must take one of the following three actions as part of your investigation and cleanup of the Site:

1. Document an exclusion from further evaluation using the criteria in WAC 173-340-7491.
2. Conduct a simplified evaluation as set forth in WAC 173-340-7492.
3. Conduct a site-specific evaluation as set forth in WAC 173-340-7493.

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation.

Completion of this form is not sufficient to document your evaluation. You still need to document your analysis and the basis for your conclusion in your cleanup plan or report.

If you have questions about how to conduct a terrestrial ecological evaluation, please contact the Ecology site manager assigned to your Site. For additional guidance, please refer to https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Terrestrial-ecological-evaluation.

Step 1: IDENTIFY HAZARDOUS WASTE SITE	
Please identify below the hazardous waste site for which you are documenting an evaluation.	
Facility/Site Name: Onni 106th Ave Bellevue LLC	
Facility/Site Address: 606 & 620 106th Avenue Northeast, Bellevue, WA 98004	
Facility/Site No: 73977	VCP Project No.: NW 3236 (Retired)

Step 2: IDENTIFY EVALUATOR		
Please identify below the person who conducted the evaluation and their contact information.		
Name: Keith Woodburne		Title: Principal Geologist
Organization: TRC Environmental Corporation		
Mailing address: 1180 NW Maple Street, Suite 310		
City: Issaquah	State: WA	Zip code: 98027
Phone: (425) 395-0010	Fax:	E-mail: kwoodburne@trccompanies.com

Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

A. Exclusion from further evaluation.

1. Does the Site qualify for an exclusion from further evaluation?

☒ Yes *If you answered **"YES,"** then answer **Question 2**.*

☐ No or Unknown *If you answered **"NO" or "UNKNOWN,"** then skip to **Step 3B** of this form.*

2. What is the basis for the exclusion? *Check all that apply. Then skip to **Step 4** of this form.*

Point of Compliance: WAC 173-340-7491(1)(a)

☒ All soil contamination is, or will be,* at least 15 feet below the surface.

☐ All soil contamination is, or will be,* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

Barriers to Exposure: WAC 173-340-7491(1)(b)

☒ All contaminated soil, is or will be,* covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife, and institutional controls are used to manage remaining contamination.

Undeveloped Land: WAC 173-340-7491(1)(c)

☒ There is less than 0.25 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.

☐ For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site.

Background Concentrations: WAC 173-340-7491(1)(d)

☐ Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

* An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.

[±] "Undeveloped land" is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

[#] "Contiguous" undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

B. Simplified evaluation.

1. Does the Site qualify for a simplified evaluation?

☒ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☐ No or Unknown *If you answered **"NO"** or **"UNKNOWN,"** then skip to **Step 3C** of this form.*

2. Did you conduct a simplified evaluation?

☒ Yes *If you answered **"YES,"** then answer **Question 3** below.*

☐ No *If you answered **"NO,"** then skip to **Step 3C** of this form.*

3. Was further evaluation necessary?

☐ Yes *If you answered **"YES,"** then answer **Question 4** below.*

☒ No *If you answered **"NO,"** then answer **Question 5** below.*

4. If further evaluation was necessary, what did you do?

☐ Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*

☐ Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

5. If no further evaluation was necessary, what was the reason? *Check all that apply. Then skip to **Step 4** of this form.*

Exposure Analysis: WAC 173-340-7492(2)(a)

☐ Area of soil contamination at the Site is not more than 350 square feet.

☒ Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

Pathway Analysis: WAC 173-340-7492(2)(b)

☒ No potential exposure pathways from soil contamination to ecological receptors.

Contaminant Analysis: WAC 173-340-7492(2)(c)

☒ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

C. Site-specific evaluation. A site-specific evaluation process consists of two parts: (1) formulating the problem, and (2) selecting the methods for addressing the identified problem. Both steps require consultation with and approval by Ecology. *See* WAC 173-340-7493(1)(c).

1. Was there a problem? *See* WAC 173-340-7493(2).

☐ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☐ No *If you answered **"NO,"** then identify the reason here and then skip to **Question 5** below:*

- ☐ No issues were identified during the problem formulation step.
- ☐ While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

2. What did you do to resolve the problem? *See* WAC 173-340-7493(3).

- ☐ Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*
- ☐ Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

3. If you conducted further site-specific evaluations, what methods did you use?
Check all that apply. See WAC 173-340-7493(3).

- ☐ Literature surveys.
- ☐ Soil bioassays.
- ☐ Wildlife exposure model.
- ☐ Biomarkers.
- ☐ Site-specific field studies.
- ☐ Weight of evidence.
- ☐ Other methods approved by Ecology. If so, please specify:

4. What was the result of those evaluations?

- ☐ Confirmed there was no problem.
- ☐ Confirmed there was a problem and established site-specific cleanup levels.

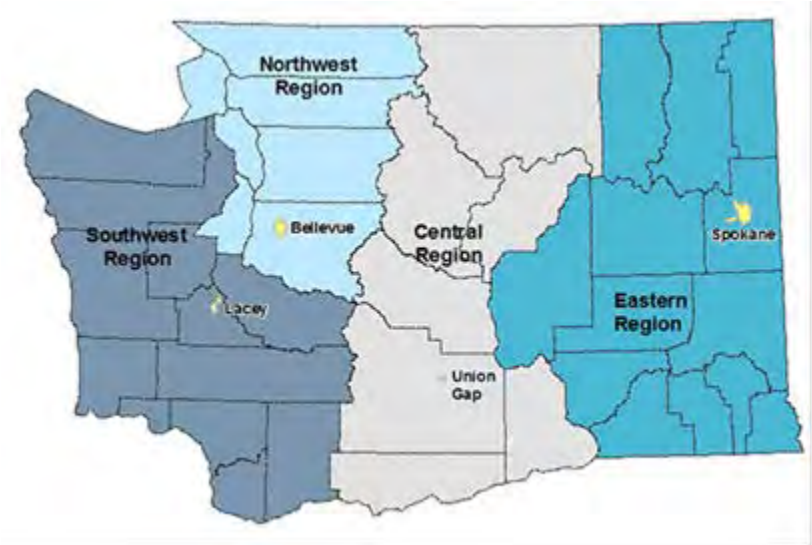
5. Have you already obtained Ecology's approval of both your problem formulation and problem resolution steps?

☐ Yes If so, please identify the Ecology staff who approved those steps:

☐ No

Step 4: SUBMITTAL

Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.



Northwest Region: Attn: VCP Coordinator 3190 160th Ave. SE Bellevue, WA 98008-5452	**Central Region:** Attn: VCP Coordinator 1250 West Alder St. Union Gap, WA 98903-0009
Southwest Region: Attn: VCP Coordinator P.O. Box 47775 Olympia, WA 98504-7775	**Eastern Region:** Attn: VCP Coordinator N. 4601 Monroe Spokane WA 99205-1295

If you need this publication in an alternate format, please call the Toxics Cleanup Program at 360-407-7170. People with hearing loss can call 711 for Washington Relay Service. People with a speech disability can call 877-833-6341.

Table 749-1

Simplified Terrestrial Ecological Evaluation-Exposure Analysis Procedure

Estimate the area of contiguous (connected) undeveloped land on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre).	
1) From the table below, find the number of points corresponding to the area and enter this number in the field to the right.	4
Area (acres) / Points 0.25 or less / 4 0.5 / 5 1.0 / 6 1.5 / 7 2.0 / 8 2.5 / 9 3.0 / 10 3.5 / 11 4.0 or more / 12	
2) Is this an industrial or commercial property? If yes, enter a score of 3. If no, enter a score of 1	3
3)[a] Enter a score in the box to the right for the habitat quality of the site, using the following rating system[b]. High=1, Intermediate=2, Low=3	3
4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2.[c]	2
5) Are there any of the following soil contaminants present: Chlorinated dioxins/furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.	4
6) Add the numbers in the boxes on lines 2-5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified evaluation may be ended.	16

Notes for Table 749-1

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

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

> **Low:** Early successional vegetative stands; vegetation predominantly noxious, nonnative, exotic plant species or weeds. Areas severely disturbed by human activity, including intensively cultivated croplands. Areas isolated from other habitat used by wildlife.

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

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

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

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

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