Urban Environmental Partners llc

REMEDIAL INVESTIGATION REPORT

Cleaners #1 Property

26112 Pacific Highway South

King County Parcel #7950301480

June 7, 2021

Prepared for:

Woodmont Investments, LLC

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1.0 Introduction

On behalf of Woodmont Investments, LLC, Urban Environmental Partners (UEP) has prepared this Remedial Investigation (RI) report for the "Cleaners #1" Site (former Voluntary Cleanup Program [VCP] ID NW1695), addressed at 26112 Pacific Highway South in Kent, Washington (the Property or Subject Property) as shown on Figures 1 and 2.

As established in the Washington Administrative Code (WAC), Chapter 173-340-200, a "Site" is defined by the full vertical and lateral extent of contamination that has resulted from the release of hazardous substances into the environment. The Cleaners #1 Site is defined by the historical release of chlorinated volatile organic compounds (CVOCs) associated with former dry-cleaning operations on the Property. These compounds include tetrachloroethylene, also known as perchloroethylene (PCE), and its degradation compounds trichloroethylene (TCE), cis-1,2-dichloroethylene (cis-1,2-DCE), trans-1,2-DCE, and Vinyl Chloride (VC).

This report was prepared for submittal to the Washington State Department of Ecology (Ecology) under the VCP, and was developed to meet the general requirements of an RI as defined by the Washington State Model Toxics Control Act (MTCA) Regulation in Chapter 173-340-350 of the WAC.

1.1 Document Purpose

The purpose of the RI was to collect data necessary to adequately characterize the Site for the purposes of developing and evaluating remedial alternatives consistent with WAC 173-340-350(7). The RI components of this report present historical information regarding the former use of the Property, summarize the scope and findings of each environmental investigation that has been conducted at the Site, provide the Site data for soil, groundwater, and vapor studies from the remedial investigations, and present a Conceptual Site Model (CSM) for the contaminant release, transport, and potential exposure pathways at the Site.

2.0 Background

The following section provides a description of the Property, a presentation of the physical settings of the Property, and a summary of environmental investigations and interim actions conducted at the Site to date.

2.1 Location, Address, and Legal Description

The Property consists of a single irregularly-shaped King County Tax Parcel (#9538200040), 1.30 acres in size, with the address range of 26110 to 26128 Pacific Highway South in Kent, Washington (Figure 2).

The following is an abbreviated legal description of the Property as provided by the King County Department of Assessments:

WOODMONT PLACE
Plat Block:
Plat Lot: 4

2.2 Current Improvements, Land Use, and Occupant Information

The Property is currently improved with a 12,740 square foot, multi-tenant retail building. At the time this report was produced, occupants included:

- Estafeta – Shipping and Mailing Service (26110 Pacific Hwy S)
- La Ideal 2 – Pasteleria Y Panaderia (26112 Pacific Hwy S)
- El Parral – Mexican Restaurant and Night Club (26122 Pacific Hwy S)
- USA Vein Clinics (26124 Pacific Hwy S)

2.3 Historical Land Use Summary

According to a review of aerial photographs and County Assessor records, the Property appears to have been vacant and undeveloped prior to construction of the existing retail building in 1983. Historical business directories indicate a dry-cleaning facility operated within the tenant space addressed at 26112 Pacific Highway South between at least 1985 and 2013. This facility reportedly utilized chlorinated dry-cleaning solvents between at least 1990 and 2001. The location of the tenant space and historical Site features are depicted on Figure 3. The tenant space is currently occupied by La Ideal 2 Pesterleria Y Panderia.

2.4 Physical Settings

Category	Description	Source
Topographic Characteristics		
Site Elevation	Approximately 270 feet above mean sea level (AMSL).	King County iMap
Topographic Gradient	The primary topographic gradient in the vicinity of the Property is from north to south toward the South Fork McSorley Creek.	Field Observations, King County iMap

Category	Description	Source
Hydrologic Characteristics		
Nearest Water Body	South Fork McSorley Creek: Approximately 500 feet south of the Property.	King County iMap
Flood Zones	Zone X: Areas Determined to be Outside 500-year Flood Plain.	FEMA Map Panel 53033C1235 F
Geologic Characteristics		
Primary Soil Types	Qgd, Pleistocene continental glacial drift: Till and outwash clay, silt, sand, gravel, cobbles, and boulders deposited by or originating from continental glaciers; locally includes peat, nonglacial sediments, modified land, and artificial fill	Geologic Map of Washington State, WSDNR, 2005
Hydrogeologic Characteristics		
Depth to Nearest Groundwater	Approximately 2-5 feet below ground surface (bgs).	Depth to Water Measurements of On-Property Monitoring Wells (2/10/21)
Groundwater Flow Direction	Groundwater flow direction has been consistently observed to the southeast.	Relative Groundwater Elevation Measurements of On-Property Monitoring Wells
Nearest Groundwater Supply Wells	The nearest groundwater supply well appears to be located approximately 2,000 feet south of the Property.	Washington State Department of Ecology Well Log Search

2.5 Summary of Environmental Investigations and Remedial Actions

This report section summarizes the release discovery and subsequent environmental investigations conducted by various consulting companies at the Site. The types and locations of the historic explorations from the investigations are depicted on Figure 4, while the cumulative soil, groundwater, and air data results from the studies are tabulated on Tables 1 through 4. The primary contaminants of concern for the Site, and those that have been the focus of the majority of these environmental investigations, are the CVOCs - PCE and its degradation products (TCE, cis-1,2-DCE, trans-1,2-DCE, and VC).

Laboratory analytical reports and boring logs, if available, are presented in Appendix A and Appendix B, respectively.

2.5.1 EMG - Phase I and II Environmental Site Assessments, 1998

In 1998, EMG performed a Phase I ESA for the Property which identified active dry-cleaning operations in the tenant space addressed at 26112 Pacific Hwy S. This land use practice was identified as a potential environmental issue, and further environmental assessment was recommended.

EMG subsequently oversaw the advancement of four borings on the Property to evaluate the environmental quality of soil and groundwater. Two borings were advanced on the exterior of the building to the east of the dry-cleaning facility (B1 and B2) and two borings were advanced on the interior of the facility, adjacent to the dry-cleaning unit (HA3 and HA4). Soil samples were collected at depths between 1 and 11 feet from the exterior borings, and between 1 and 6 feet bgs from the interior borings. Two soil samples collected from each boring were selected for laboratory analysis.

Two grab groundwater samples were also collected from borings B1 and B2, however only the sample collected from B1 was selected for laboratory analysis.

Soil and groundwater samples collected during the investigation were analyzed for volatile organic compounds (VOCs) by EPA Method 8260.

<u>Investigation Findings – Soil</u>

- The soil sample collected from boring B1 at 11 feet bgs contained a concentration of PCE in excess of its MTCA Method A Cleanup Level.
- The soil samples collected from boring B2 at 4 and 11 feet bgs contained concentrations of PCE in excess of its MTCA Method A Cleanup Level. The sample collected at 4 feet bgs also contained a concentration of TCE in excess of its MTCA Method A Cleanup Level.
- The soil samples collected from boring HA3 at 2 and 6 feet bgs contained concentrations of PCE in excess of its MTCA Method A Cleanup Level.
- The remaining soil samples contained no detectable concentrations of contaminants of concern, or concentrations below their respective MTCA Method A or Method B Cleanup Levels, as appropriate.

<u>Investigation Findings – Groundwater</u>

- The groundwater sample collected from boring B1 contained concentrations of PCE and cis-1,2-DCE in excess of their respective MTCA Method A or Method B Cleanup Levels, as appropriate.

The results of the investigation indicated that a release of CVOCs had occurred associated with dry-cleaning operations, which had impacted both soil and groundwater on the Property.

2.5.2 Environmental Associates, Inc. – Subsurface Investigation, 1998

In September of 1998, Environmental Associates, Inc. (EAI) conducted a subsurface investigation on the to further evaluate the nature and extent of the CVOC release on the Property.

EAI oversaw the advancement of nine borings to depths between 6.5 and 24 feet bgs. Six of the borings were advanced on the exterior of the building (B-1 through B-6) and three of the borings were advanced on the interior of the building (B-7 through B-9). The six exterior borings were completed as 2-inch diameter resource protection wells (MW-1 through MW-6).

Soil samples were collected at depths between 3 and 19 feet from the exterior borings, and between 1 and 8 feet bgs from the interior borings. Between two and four samples from each boring were selected for laboratory analysis.

Groundwater samples were also collected from each of the six monitoring wells using sterilized Teflon bailers.

Select soil and groundwater samples were analyzed for CVOCs by EPA Method 8260B.

<u>Investigation Findings - Soil</u>

- The soil sample collected from B-1 at 3 to 4 feet bgs contained a concentration of PCE in excess of its MTCA Method A Cleanup Level.
- The soil sample collected from B-3 at 13 to 14 feet bgs contained a concentration of PCE in excess of its MTCA Method A Cleanup Level.
- The soil samples collected from boring B-7 at 1 and 3.5 feet bgs contained concentrations of PCE in excess of its MTCA Method A Cleanup Level.
- The soil samples collected from boring B-8 at 3.5, 5.7, and 8 feet bgs contained concentrations of PCE in excess of its MTCA Method A Cleanup Level.
- The soil samples collected from boring B-9 at 3.5 and 6.5 feet bgs contained concentrations of PCE in excess of its MTCA Method A Cleanup Level.
- The remaining soil samples contained no detectable concentrations of contaminants of concern, or concentrations below their respective MTCA Method A or Method B Cleanup Levels (A/B), as appropriate. It should be noted that several of the detection limits were above current cleanup levels.

Investigation Findings – Groundwater

- The groundwater sample collected from monitoring well MW-1 contained concentrations of PCE, TCE, and cis-1,2-DCE in excess of their respective MTCA Method A or Method B Cleanup Levels, as appropriate.
- The groundwater sample collected from monitoring well MW-2 contained a concentration of PCE in excess of its MTCA Method A Cleanup Level.
- The groundwater sample collected from monitoring well MW-3 contained concentrations of PCE, TCE, cis-1,2-DCE, and VC in excess of their respective MTCA Method A or Method B Cleanup Levels, as appropriate.
- The groundwater samples collected from monitoring wells MW-4, MW-5, and MW-6 contained no detectable concentrations of CVOCs. It should be noted that the detection limits for vinyl chloride were above current cleanup levels.

2.5.3 Environmental Associates, Inc. – Interim Action, 1998

In December of 1998, EAI performed an in-situ chemical injection to reduce concentrations of PCE in soil and groundwater via enhanced reductive dechlorination. Approximately 1,140 pounds of hydrogen release compound (HRC) was injected into the subsurface through 55 geoprobe injection points located to the east of the dry-cleaning facility (Figure 5).

To monitor the effectiveness of the interim remedial action, groundwater samples were collected from monitoring wells MW-1, MW-2, and MW-3 on a monthly basis following injection (Table 2).

The results of the groundwater monitoring showed a significant increase in contaminant concentrations in MW-1, as opposed to the expected decrease. To evaluate the reason for this unexpected condition, EAI performed a sewer inspection and sampling event consisting of: a video scan of the sewer system; the advancement of two geoprobes in the vicinity of the sewer lines (B-11 and B-12); and the collection of 3 separate sewer effluent samples, 1 dry-cleaning machine effluent sample, 1 boiler effluent sample, and one groundwater sample from a location labeled Well B-8.

Investigation Findings

- The video scan revealed significant corrosion of the primary 4-inch metal sewer line leaving the building, in addition to possible leakage points at a junction between the 4-inch metal pipe and a 6-inch PVC connection on the eastern exterior of the building.
- The soil samples collected from B-11 did not contain concentrations of CVOCs in excess of their respective laboratory reporting limits and/or MTCA Method A/B Cleanup Levels.

- The soil samples collected from B-12 at 1, 2, and 5 feet bgs contained concentrations of PCE at concentrations exceeding its MTCA Method A Cleanup Level. The sample collected from 5 feet bgs also contained a concentration of TCE in excess of its MCTA Method A Cleanup Level.
- The water samples collected from the sewer effluent, machine effluent, boiler effluent, and Well B-8 all contained concentrations of PCE in excess of its MTCA Method A Cleanup Level for groundwater.

Based on these findings, EAI concluded that there was likely an ongoing release of PCE into the subsurface and recommended the replacement of the sewer lines and repair of the dry-cleaning machines.

During the recommended sewer replacement efforts in April of 1999, approximately 120 tons of PCE contaminated soil was excavated from adjacent to the sewer line and eastern wall of the dry-cleaning facility (Figure 5). Soil samples collected from the final limits of the excavation contained concentration of PCE below the MTCA Method A Cleanup at the time; however, one of the samples would not be considered in compliance with current Method A Cleanup Levels.

Prior to backfilling with clean material, approximately 18 gallons of HRC was applied directly to the floor of the excavation areas to enhance the treatment efforts.

A second HRC application event was also conducted in July of 2000, which consisted of the injection of 69 gallons of HRC and HRC primer at 17 exterior locations and 9 locations within the interior of the dry cleaner tenant space (Figure 5).

After completion of the sewer replacement, remedial excavation, and second injection event, EAI conducted periodic groundwater monitoring of wells MW-1 through MW-6, as well as the sewer effluent discharge between 1999 and 2005 (Tables 2 and 3).

<u>Investigation Findings – Groundwater and Wastewater Discharge</u>

- The groundwater samples collected from monitoring well MW-1 showed a reduction in CVOC concentrations after replacement of the sewer line and remedial injections, and eventually contained no detectable concentrations for 4 consecutive quarters between October of 2004 and October of 2005.
- The groundwater samples collected from monitoring well MW-2 showed a reduction in CVOC concentrations after replacement of the sewer line and remedial injections, and eventually contained no detectable concentrations for 10 consecutive sampling events between April of 2001 and October of 2005.

- The groundwater samples collected from monitoring well MW-3 showed a reduction in CVOC concentrations after replacement of the sewer line and remedial injections, and eventually contained no detectable concentrations for 5 consecutive sampling events between June of 2004 and October of 2005.
- The groundwater samples collected from monitoring wells MW-4 through MW-6 did not contain detectable concentrations of CVOCs during any sampling event.
- The water samples collected from the sewer effluent continued to show variable and elevated concentrations of CVOCs between 1998 and 2001, indicating the potential of for a release was still present. It is our understanding that the facility ceased using chlorinated cleaning solvents in 2001 due to this ongoing concern.

Based on these findings, EAI submitted a *Soil and Groundwater Remediation Summary* to Ecology in October of 2006 under the Voluntary Cleanup Program (VCP). The report detailed site work to date and requested a determination of No Further Action; however, Ecology determined that the independent remedial actions performed were not sufficient to meet the substantive requirements of MTCA. Ecology's April 26, 2007 opinion letter is included in Appendix C.

After subsequent communication and clarifications provided by EAI to address Ecology's concerns (Appendix C), it was determined that the majority of issues/questions had been adequately resolved with the exception of an evaluation of the soil vapor pathway at the Site.

2.5.4 Environmental Associates, Inc. – Indoor Air Testing, 2008-2009

In May of 2008, EAI performed indoor air testing to evaluate the potential for CVOC vapor intrusion into the existing retail building. One 6-Liter Summa Canister (vacuum cylinder) was positioned in the breathing zone, approximately 4-6 feet above the concrete slab, and one 6-Liter Summa Canister was positioned on the floor, directly adjacent to a crack in the concrete slab by the dry-cleaning machine and in close proximity to where contaminated soil had previously been detected in underlying soil. The Summa Canisters were opened and left to collect air overnight. The locations of the indoor air samples were not presented graphically within EAIs report; therefore, these sample locations are not shown on Figures within this RI.

The air samples were then analyzed for VOCs by EPA Method TO15-SIM.

<u>Investigation Findings - Air</u>

- Both samples contained concentrations of PCE in excess of its MTCA Method B Cleanup Level for Indoor Air established at the time of the investigation (Table 4). The detected PCE concentrations do not exceed current MTCA Method B Cleanup Levels for Indoor Air.

- Both samples contained concentrations of TCE in excess of its current and historical MTCA Method B Cleanup Levels for Indoor Air (Table 4).

Given that the dry-cleaning machine no longer utilized PCE, it was theorized that spot cleaning products used at the facility could have affected the indoor air sampling results. A calculation conducted by EAI revealed that less than one drop of PCE could have resulted in the vapor concentrations detected in during the investigation.

EAI subsequently conducted a site reconnaissance and spot cleaner product inventory and analysis. Nine different samples were collected of various cleaning products stored at the facility and were analyzed for the presence of PCE and TCE.

Five of the 9 samples contained PCE and 3 of the samples contained both PCE and TCE. These results confirmed the presence of CVOCs in cleaning products utilized at the facility and EAI theorized that this may have affected the accuracy of the air sample data with respect to vapor intrusion.

After removal of the products of concern, four additional indoor air samples were collected and analyzed using similar methodology to that described above. The locations of the indoor air samples were not presented graphically within EAIs report; therefore, these sample locations are not shown on Figures within this RI.

Investigation Findings - Indoor Air

- All four samples contained concentrations of PCE in excess of its MTCA Method B Cleanup Level for Indoor Air established at the time of the investigation (Table 4). The detected PCE concentrations do not exceed current MTCA Method B Cleanup Levels for Indoor Air.
- All four samples contained concentrations of TCE in excess of its MTCA Method B Cleanup Level for Indoor Air established at the time of the investigation (Table 4). Concentrations in two of the four samples do not exceed current MTCA Method B Cleanup Levels for Indoor Air.

Based on these findings, addition investigation/analysis appeared warranted.

2.5.5 Environmental Associates, Inc. – Soil Vapor Testing, 2009

In November of 2009, EAI performed soil vapor testing to further evaluate the correlation between CVOC concentrations detected in indoor air, and the potential for off-gassing from contaminants located beneath the structure.

One vapor sample was collected from within the casing of monitoring well B-8, located on the interior of the dry-cleaning tenant space. Monitoring well B-8 was determined to be an appropriate location for a

soil gas sample given that it generally coincided with the approximate center of the suspected source area, and was screened across the vadose zone.

A stainless-steel draw tube was advanced through a pre-drilled hole in the center of the slip-cap attached to the top of the well casing in an effort to seal and isolate the soil vapor from within the casing from that of ambient air. The draw tube was attached to a 6-liter Summa Canister fitted with a flow regulator calibrated to an 8-hour collection period. The sample was then analyzed for VOCs by EPA Method TO-15 SIM.

Investigation Findings - Soil Vapor

- The soil vapor sample collected from monitoring well B-8 contained concentrations of TCE, cis-1,2-DCE, and VC in excess of screening levels considered protective of indoor air established by EAI in consultation with Ecology (100 times the MTCA Method B Indoor Air Cleanup Level established at the time). The concentrations of TCE and VC also exceed their current respective MTCA Method B Sub Slab Soil Gas Screening Levels.

Based on the concentration differences and ratios between individual contaminants detected in the soil vapor sample collected within monitoring well B-8 and those observed within the interior of the dry-cleaning tenant space, EAI concluded that the CVOC concentrations detected in indoor air appeared to be from a source other than subsurface soil vapor and that the existing slab was adequately attenuating the CVOC vapors present beneath the building.

EAI also performed a three-phase contaminant mass partitioning model for the soil vapor concentrations, which led to their conclusion that contaminant masses still sorbed to soil beneath the Property are at very low trace levels, such that further active remediation of subsurface soil and/or groundwater would not likely improve indoor air quality.

EAI presented this position to Ecology along with a request for a determination of No Further Action; however, Ecology determined that further action was necessary to clean up contamination at the Site.

Ecology indicated that: the Site characterization was insufficient; the cleanup levels and points of compliance established for the Site did not meet the substantive requirements of MTCA; the cleanup action selected did not meet the substantive requirements of MTCA; and the cleanup performed did not meet any of the cleanup standards at the Site. Ecology's February 22, 2010 opinion letter is included in Appendix C.

EAI responded to this opinion letter with concerns regarding the consistency of information being received from Ecology case managers throughout the VCP process and requested that Ecology issue a partial sufficiency letter for components of the Site that were agreed to be in compliance with MTCA.

This partial sufficiency letter was provided by Ecology on August 3, 2010 and is included in Appendix C. The opinion letter identified the following data gaps with respect to site characterization:

- "Indoor air in the cleaners has been identified to exceed the Method B level for Tetrachloroethene and Trichloroethene for indoor air. Please delineate the extent of the soil vapor beneath the slabs and the indoor air within the buildings. Ecology is concerned about indoor air impacts to the Karen Beauty Supply, the Albertsons Grocery Store, and the strip mall retail businesses located next to this site."
- "Determine the extent of the residual Tetrachloroethene, Trichloroethene, and daughter by-product soil contamination that is contributing to the vapor phase impacts at this site."

After approximately 3 years of inactivity, Ecology removed the Site from the VCP and terminated the agreement.

2.5.6 SoundEarth Strategies – Subsurface Investigation, 2017

In September of 2017, SoundEarth Strategies (SES) performed a subsurface investigation in an attempt to address the data gaps identified in Ecology's partial sufficiency letter from 2010. The investigation consisted of the advancement of 8 borings (P01 through P08) and one soil vapor sample point (SS01), as well as monitoring conditions of several existing wells at the Site (MW-2 through MW-6).

Soil samples were collected from borings P01 through P08 at depths between 2 and 16 feet bgs; a soil vapor sample was collected from sample point SS01; reconnaissance groundwater samples were collected from borings P02, P04, and P05; and low-flow groundwater samples were collected from monitoring wells MW-2 through MW-6 in accordance with American Society of Testing and Materials (ASTM) Guideline D6771-02 "Standard Practice for Low-Flow Purging and Sampling for Wells and Devices Used for Ground-Water Quality Investigations" (ASTM low flow methodology).

Select soil and groundwater samples were analyzed for CVOCs by EPA Method 8260C, and the soil vapor sample was analyzed for VOCs by EPA Method TO-15.

<u>Investigation Findings - Soil</u>

- The soil sample collected from boring P08, at a depth of 12 feet bgs, contained concentrations of PCE and TCE in excess of their respective MTCA Method A Cleanup Levels. The sample collected in P08 at 16 feet was not analyzed, but did show significantly lower photoionization detector (PID) readings which were similar to those identified in sample P05 at 2 feet (discussed below).

- The soil sample collected from boring P05, at a depth of 2 feet bgs, contained a detectable concentration of PCE, however the concentration was below its MTCA Method A Cleanup Level.
- None of the remaining soil samples contained detectable concentrations of CVOCs.

Investigation Findings - Groundwater

- The groundwater sample collected from boring P02 contained concentrations of PCE, TCE, cis-1,2-DCE, and VC in excess of their respective MTCA Method A/B Cleanup Levels.
- The groundwater sample collected from borings P04 contained concentrations of PCE and TCE in excess of their respective MTCA Method A Cleanup Levels.
- The groundwater sample collected from borings P05 contained concentrations of PCE in excess of its MTCA Method A Cleanup Level.
- The groundwater samples collected from monitoring wells MW-2 and MW-3 contained concentrations of VC in excess of its MTCA Method A Cleanup Level.
- None of the remaining groundwater samples contained detectable concentrations of CVOCs.

Investigation Findings - Soil Vapor

- The sub slab soil vapor sample collected from sample point SS01 contained concentrations of PCE and TCE in excess of their respective MTCA Method B Sub-Slab Screening Levels at the time.

2.5.7 Partner Engineering and Science – Sub-slab Soil Vapor Investigation, 2017

In December of 2017, Partner Engineering and Science (Partner) performed a sub-slab soil vapor investigation on the north adjacent parcel to evaluate potential for vapor intrusion into the existing retail structure. Four vapor sampling points (SS-1 through SS-4) were installed as close to the southern wall of the structure as possible, to best evaluate potential impacts from the former dry-cleaning facility. Pertinent samples are depicted on Figure 4.

Samples were collected using 1-liter Summa Canisters fitted with flow regulators calibrated to a rate of approximately 0.1 liters per minute.

The samples were analyzed for CVOCs by EPA Method TO-15.

Investigation Findings - Sub-Slab Soil Vapor

- The soil vapor sample collected from vapor point SS-1 did not contain detectable concentrations of CVOCs.

- The soil vapor sample collected from vapor point SS-2 did not contain detectable concentrations of CVOCs.
- The soil vapor sample collected from vapor point SS-3 contained a detectable concentration of PCE, however the concentration was below the MTCA Method B Sub-Slab Soil Gas Screening Level considered protective of indoor air.
- The soil vapor sample collected from vapor point SS-4 contained a concentration of VC in excess of its MTCA Method B Sub-Slab Soil Gas Screening Level considered protective of indoor air. This sample also contained detectable concentrations of PCE, TCE, and cis-1,2-DCE, however the concentrations were below their respective screening levels (if established).

Partner concluded that given the lack of potential environmental concerns on the north-adjacent parcel, the source of the contaminants in soil vapor were likely from the dry-cleaning facility on the Subject Property. Based on these findings, Partner recommended an indoor air assessment.

It should be noted that UEP questions the conclusion made by Partner regarding the source of the CVOCs identified in soil vapor. The two soil vapor samples collected closest to the known area of soil/groundwater contamination contained no detectable concentrations of CVOCs. The soil vapor sampling point that contained elevated contaminant concentrations was positioned the furthest away from the CVOC plume at the Subject Property, suggesting a possible secondary source.

2.5.8 Partner Engineering and Science – Indoor Air Quality Survey, 2018

In November of 2018, Partner performed an indoor air quality survey within the retail grocery store on the north adjacent parcel to evaluate for potential vapor intrusion associated with the CVOC plume beneath the Subject Property.

Five indoor air samples (IA1 through IA5) and one ambient air sample (AA1) were collected using 6-Liter Summa Canisters fitted with flow regulators calibrated to an 8-hour collection period. Pertinent samples are depicted on Figure 4.

The samples were analyzed for CVOCs by EPA Method TO-15.

Investigation Findings - Indoor Air

- Ambient air sample AA1 and indoor air sample IA1 did not contain detectable concentrations of CVOCs.
- Indoor air samples IA2 through IA5 contained detectable concentrations of PCE, however the concentrations were well below its MTCA Method B Cleanup Level for Indoor Air.

Based on these findings, Partner concluded that there was no significant risk to human health associated with vapor intrusion and recommended no further action.

Again, it should be noted that the indoor air sample (IA1) collected closest to the former dry-cleaning facility did not contain detectable concentrations of CVOCs. The indoor air samples that did detect CVOCs were located further to the north and east, throughout the adjacent retail structure.

2.5.9 Dixon Environmental Services – Vapor Intrusion Assessment, 2019

In July of 2019, Dixon Environmental Services (Dixon ES) performed a Vapor Intrusion Assessment to further evaluate the potential for adverse impacts to indoor air quality at the Property. The previous indoor air evaluation conducted by EAI resulted in the opinion that contaminants present in indoor air were likely the results of cleaning products present in the structure, and not through vapor intrusion (Section 2.5.5).

Dixon ES collected one sub-slab vapor sample (Sub Slab), one indoor air sample (Indoor Air), and one ambient air sample (Ambient Air) during the investigation. The sub-slab sample was collected in what was thought to be sub-slab sample point SS01, previously advanced by SES, but upon review of Dixon ES' report, UEP believes this conduit may have been a drain associated with the former dry-cleaning machine and should be considered a sewer gas sample. The sewer gas sample was collected using a 1-Liter Summa canister fitted with a flow regulator calibrated to a rate of approximately 150 to 200ml per minute, while the indoor air and ambient air samples were collected in 6-Liter Summa Canisters fitted with flow regulators calibrated to an 8-hour collection period.

The samples were analyzed for CVOCs by EPA Method TO-15.

<u>Investigation Findings - Sewer Gas</u>

- The sewer gas sample contained concentrations of PCE and TCE in excess of their respective MTCA Method B Sub-Slab Soil Gas Screening Levels.

<u>Investigation Findings – Indoor Air</u>

- Neither air sample contained detectable concentrations of CVOCs.

Based on these results, the volatilization of contaminants beneath the structure, or within sewer conduits, remains as a vapor encroachment condition for the Property, however the existing mitigation measures in place (capping of utility conduits and concrete slab) appear to provide sufficient protection to indoor air quality given that no CVOCs were detected in the indoor air sample.

2.5.10 Urban Environmental Partners – Groundwater Sampling Event, July 2020

In July of 2020, UEP resampled existing monitoring wells MW-1 through MW-6 located on the exterior of the retail building. Well B-8, located on the interior of the structure, was referenced as MW-7 for nomenclature consistency and appeared to have been decommissioned or was otherwise obstructed. The sampling event was conducted to assess current groundwater conditions across the Site as the wells had not been sampled since 2017. Samples were collected in accordance with ASTM low flow methodology and were analyzed for CVOCs by EPA Method 8260C.

Investigation Findings - Groundwater

- The groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3 contained concentrations of VC in excess of its MTCA Method A Cleanup Level. These samples also contained detectable concentrations of cis-1,2-DCE, however the concentrations were below its MTCA Method B Cleanup Level.
- None of the remaining groundwater samples contained detectable concentrations of CVOCs.

Based on these findings, it appeared that the eastern extent of the groundwater plume remained undefined and that the dissolved phase CVOCs in groundwater had not yet fully degraded.

2.5.10 Urban Environmental Partners – Passive Soil Vapor Assessment, August 2020

In August of 2020, UEP performed a soil vapor assessment to further assess the CVOC source area and the extent of shallow soil impacts. Twenty-nine passive soil vapor samplers (Gore Sorbers) were installed within the interior, to the east, and to the southeast of the former dry-cleaning tenant space (Figure 6).

Investigation Findings - Soil Vapor

Fourteen of the 29 soil vapor samples contained detectable concentrations of PCE, with the highest concentrations located on the interior of the structure, adjacent to the former dry-cleaning machines; the detected concentrations ranged from 0.02µg to 81.5µg (Figure 6).

These results indicate a possible source of soil in the vicinity of the former dry-cleaning machine and potential smaller secondary source in the vicinity of the lateral sewer lines.

2.5.11 Urban Environmental Partners – Well Installation and Sampling, August 2020

In November of 2020, UEP advanced two borings positioned to the west and east of the former dry-cleaning tenant space to evaluate the cross-gradient extents of the dissolved phase CVOC plume in groundwater. The two boring were advanced to depths of 20 feet bgs and were completed as 1-inch diameter resource protection wells (MW08 and MW09).

Groundwater samples were collected in accordance with ASTM low flow methodology and were analyzed for CVOCs by EPA Method 8260C.

Groundwater Sampling Results

- Neither groundwater sample contained detectable concentrations of CVOCs.

Based on these results, it appears the western and eastern extents of the dissolved phase CVOC plume in groundwater have been defined.

2.6 Subsurface Conditions

Subsurface conditions have been evaluated at the Site through interpretation of soil characteristics, and observation of groundwater levels in monitoring wells that have been installed. This data and associated interpretation provide the basis for understanding the distribution and movement of the contamination at the Site.

2.6.1 Soil Conditions

Previous environmental investigations have shown the Site to be underlain with approximately 3 feet of fill, followed by moist fine grained sandy silt with variable gravel content to approximately 6-8 feet bgs, then wet gravelly sand with silt to the maximum depth explored of 24 feet bgs.

2.6.2 Groundwater Conditions

Groundwater levels from monitoring wells MW-1 through MW-6, and MW-9 were most recently measured on February 9, 2021. The depth to groundwater ranged from 2.30 feet to 5.05 feet below the top of the monitoring well casings. The calculated groundwater elevations ranged from 94.76 to 95.74 feet above an arbitrary benchmark of 100' at MW-1. The monitoring well network was surveyed to an accuracy of 0.01 feet relative to one another.

Calculated groundwater elevations indicate a predominant flow direction to the southeast at a gradient of 0.007 feet per foot, between monitoring wells MW-4 and MW-5.

A generalized depiction of groundwater flow is presented on Figure 7.

3.0 Conceptual Site Model

This section presents a conceptual understanding of the Site and identifies potential or suspected sources of hazardous substances, types and concentrations of hazardous substances, potentially contaminated media, potential exposure pathways and receptors, and contaminant fate and transport.

3.1 Confirmed and Suspected Source Area

The results of the RI indicate that the CVOC impacts confirmed in soil and groundwater beneath the Site are the result of dry-cleaning operations between approximately 1990 and 2001 in the tenant space addressed at 26112 Pacific Hwy South. The primary source area appears to be below the former dry-cleaning machine and lateral sewer lines to the south and east.

No ongoing chlorinated solvent releases from the former dry cleaner are now occurring at the Site; however, the contaminated soil continues to act as a secondary source to soil vapor and groundwater.

3.2 Contaminants of Concern

Based on the results of the RI, the primary Contaminants of Concern (COCs) for the Site include PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and VC.

3.3 Media of Concern

Based on the results of the RI, soil and groundwater are the confirmed media of concern for the Site.

Indoor air will be retained as a media of concern for future on-Site structures due to the CVOC concentrations present in soil gas; however, as discussed in Section 2.5, indoor air sampling results have not indicated an elevated risk for vapor intrusion into current on-Property structures.

3.4 Contaminant Fate and Transport

Chlorinated solvents present, or historically present, beneath the Site include PCE, TCE, cis-1,2-DCE, and VC. The PCE daughter products are likely present as a result of chemical or biological degradation of PCE. Because both PCE and the daughter products share similar environmental fate and transport characteristics and are present in the same media, PCE is the focus of the contaminant fate and transport discussion.

3.4.1 Transport Mechanisms Affecting Distribution of PCE in the Subsurface

The lateral distribution of PCE concentrations in the vadose zone appear to be the result of solvent laden wastewater escaping through preferential pathways in the sanitary sewer lines connected to the former dry-cleaning machine, and potentially through vapor-phase transport via diffusion. This distribution is limited primarily by geologic factors and will typically follow the path of least resistance.

The transport of PCE within the saturated zone is primarily driven by horizontal and vertical groundwater flow gradients; groundwater beneath the Site generally flows toward the southeast.

3.4.2 Environmental Fate of Chlorinated Solvents in the Subsurface

Once PCE enters the subsurface, chemical attenuation processes such as hydrolysis, direct mineralization, and reductive dehalogenation may affect the PCE in soil and groundwater, resulting in a natural reduction or breakdown into nontoxic components such as chloride and carbon dioxide. Biological attenuation processes such as reductive dechlorination and cometabolic degradation also may affect the reduction of PCE in soil and groundwater under conducive subsurface conditions. If reductive biodegradation of PCE is occurring, the first indication is the presence of degradation compounds that include TCE, cis-1,2-DCE, trans-1,2-DCE, and VC.

TCE, cis-1,2-DCE, and VC have been detected in soil and/or groundwater beneath the Site, demonstrating that biological and possibly chemical attenuation processes are occurring, which were likely enhanced due to the interim remedial actions conducted by EAI.

3.5 Distribution of Contamination in Soil

Based on the results of previous investigations, the vertical and lateral extent of CVOC contamination in soil appears to be limited to the area beneath the former dry-cleaning machines, extending approximately 15 feet to the south and east, between 1 and approximately 12 feet bgs (Figures 8 and 10).

The impacts are laterally bound by the absence of contamination in boring P05 to the west; P06 and HA4 to the north; P03 and P04 to the east; and P04 and P07 to the south.

The vertical bound of contamination is primarily inferred from the excavation soil samples collected at the base of the primary sewer excavation. The soil sample collected from boring P08 at 16 feet was not analyzed at the lab for unknown reasons, however a comparison of PID readings at that depth to that of soil screened from P05 at 2 feet bgs indicate that CVOCs were likely at similar concentrations and in compliance with MTCA cleanup levels.

Soil with CVOC concentrations exceeding current MTCA Method A/B Cleanup Levels was left in place in the area of soil sample EXC-3 due to less conservative cleanup levels in place at the time, however this area was within the primary HRC injection array and was likely treated at that time.

3.6 Distribution of Contamination in Groundwater

Based on the results of previous investigations, the lateral extent of CVOC contamination in groundwater appears to be limited to the area beneath the former dry-cleaning machines, extending to the east/southeast in relation to groundwater flow paths (Figures 9 and 10).

These impacts are bound by the absence of contamination in monitoring well MW-8 to the west, monitoring well MW-9 to the east, and monitoring wells MW-4 through MW-6 to the south. Exploration of groundwater to the north is limited by the presence of an existing retail structure; however, based on our understanding of the CSM, the contaminant transport mechanisms at the Site do not support a northerly migration and distribution of contaminants, therefore MW-2 appears to represent the leading edge of the CVOC plume in groundwater and will be proposed as the northern point of compliance.

3.7 Exposure Pathways

This section discusses the confirmed and potential human health and ecological exposure pathways at the Site.

3.7.1 Soil Pathway

Potential exposure pathways for soil contamination include volatilization into soil vapor and subsequent exposure through the vapor pathway discussed below, or via the direct contact pathway, which comprises direct contact via dermal contact with and/or ingestion of soil beneath the Site.

Contamination at the Site is currently capped with asphalt or concrete, however, until such time that the soil contamination is removed, remediated, or institutional controls are in place to prevent direct contact, this pathway will be considered complete.

3.7.2 Groundwater Pathway

Potential exposure pathways for groundwater contamination include volatilization into soil vapor and subsequent exposure through the vapor pathway discussed below, or via the direct contact pathway, which comprises both the dermal contact and ingestion pathways.

Dermal contact scenarios could include construction workers encountering shallow seated groundwater during remediation or utility work; therefore, this exposure pathway will remain complete until contamination is remediated or institutional controls are in place to prevent direct contact.

Given that groundwater is not a source of drinking water at the Site, the risk of ingestion of contaminated groundwater is low, however it could be argued that this aquifer represents a potential future source of drinking water and cannot be deemed non-potable based on current conditions. Therefore, this exposure pathway will remain complete until contamination is remediated or institutional controls are in place to prevent potable groundwater classification and use.

3.7.3 Vapor Pathway

The air-filled pore space between soil grains in the unsaturated zone is referred to as soil gas or soil vapor. Soil vapor can become contaminated from the volatilization of contaminants adsorbed to soil mineral surfaces and/or dissolved in groundwater and can pose a human exposure risk via inhalation.

The CVOC concentrations detected in soil vapor beneath the Property indicate a potential for vapor intrusion into future structures if sufficient engineering controls are not in place; therefore, this pathway will remain complete until soil and groundwater contamination no longer presents a threat of volatilization or engineering and institutional controls are in place to prevent exposure.

3.8 Terrestrial Ecological Evaluation

The Terrestrial Ecological Evaluation (TEE) is required by WAC 173-340-7940 at locations where a release of a hazardous substance to soil has occurred. The regulation requires that one of the following actions be taken to assess potential risk to plants and animals that live entirely or primarily on affected land:

- Documenting a TEE exclusion using the criteria presented in WAC 173-340-7491;
- Conducting a simplified TEE in accordance with WAC 173-340-7492; or,
- Conducting a site-specific TEE in accordance with WAC 173-340-7493.

Given that the cleanup action plan has not yet been finalized, it was unclear if the Site would qualify for a TEE exclusion; therefore, a simplified evaluation was conducted through contaminant analysis (WAC 173-340-7492(2)(c)). The simplified evaluation found that no contaminant listed in Table 749-2 of MCTA are present at the Site, therefore no further evaluation was necessary.

4.0 References

- Dixon Environmental Services LLC, 2019, *Vapor Intrusion Assessment*, July 18.
- Environmental Associates, Inc. (EAI), 1998a, *Phase II Environmental Assessment of Woodmont Place Shopping Center*, September 15, 1998.
- Environmental Associates, Inc. (EAI), 1998b, *Supplemental Subsurface Sampling & testing, The Cleaners #1 (Woodmont Place)*, October 14.
- Environmental Associates, Inc. (EAI), 1999, *Supplemental Investigation, Woodmont Place Shopping Center The Cleaners #1*, March 23.

- Environmental Associates, Inc. (EAI), 2000a, *Soil and Groundwater Remediation Interim Report, The Cleaners #1 (Woodmont Place)*, March 10, 2000.

- Environmental Associates, Inc. (EAI), 2000b, Letter to Coast Management Company, Inc., RE: The Cleaners #1, October 25.

- Environmental Associates, Inc. (EAI), 2006, *Soil and Groundwater Remediation Summary, The Cleaners #1 (Woodmont Place)*, October 16.

- Environmental Associates, Inc. (EAI), 2009a, *Indoor Air Testing, Cleaners #1*, August 28.

- Environmental Associates, Inc. (EAI), 2009b, *Preliminary Soil Vapor Testing, Cleaners #1*, December 31.

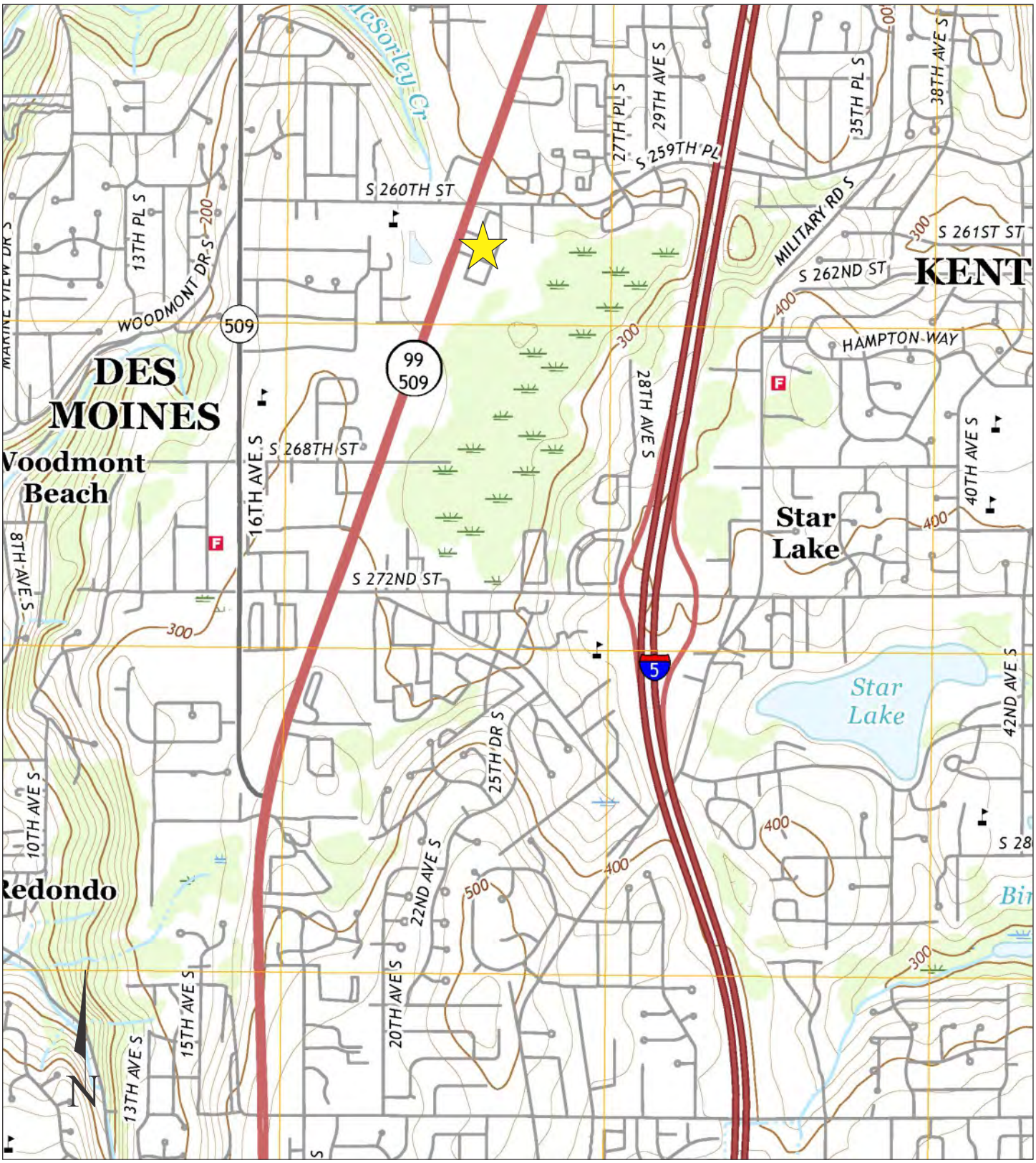
- EMG, 1998, *Phase II Environmental Assessment of Woodmont Place Shopping Center*, September 15.

- Partner Engineering and Science (Partner), 2018a, *Sub-Slab Soil Gas Investigation Report, Woodmont Place*, October 30.

- Partner Engineering and Science (Partner), 2018b, *Indoor Air Quality Survey Report, Woodmont Place*, November 29.

- SoundEarth Strategies (SES), 2017, Email correspondence to Jonathan Tran, Rainier Properties, RE: Woodmont Results, dated October 12.

Exhibit A: Figures



UEPllc

LEGEND

★ Subject property

Topographic Map

Project Address:

26112 Pacific Hwy South
Kent, WA 98144

Figure:

1

UEP llc

LEGEND

– · – · – Property Boundary

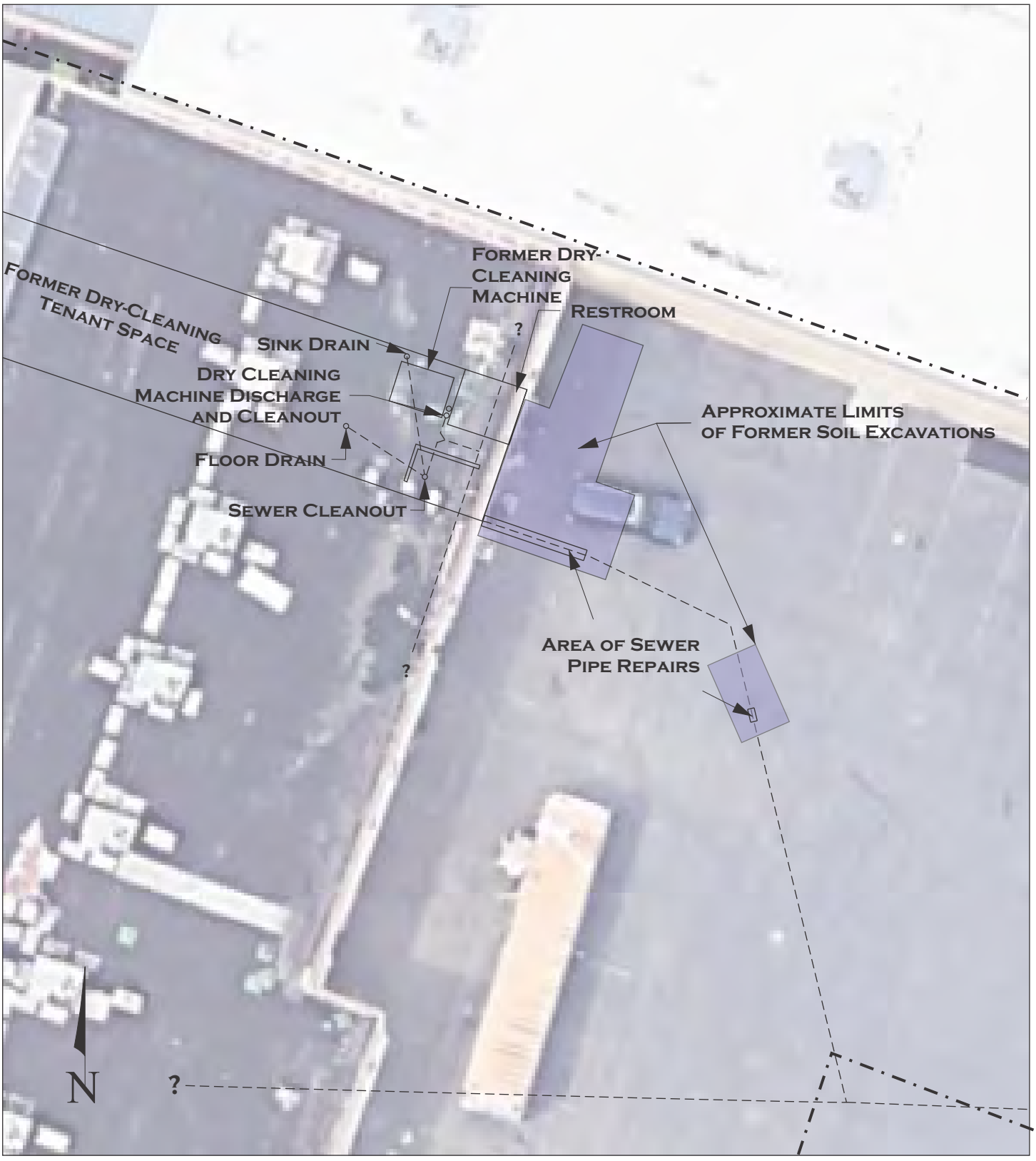
Vicinity Map

Project Address:

26112 Pacific Hwy South
Kent, WA 98144

Figure:

2



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Property Boundary

Side Sewer Line

Site Plan

Project Address:

26112 Pacific Hwy South
Kent, WA 98144

Figure:

3

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LEGEND

- EMG Boring
- EAI Boring
- SES Boring
- Monitoring Well
- SES Soil Vapor
- Partner Soil Vapor
- Partner Air Sample
- Dixon ES Air Sample

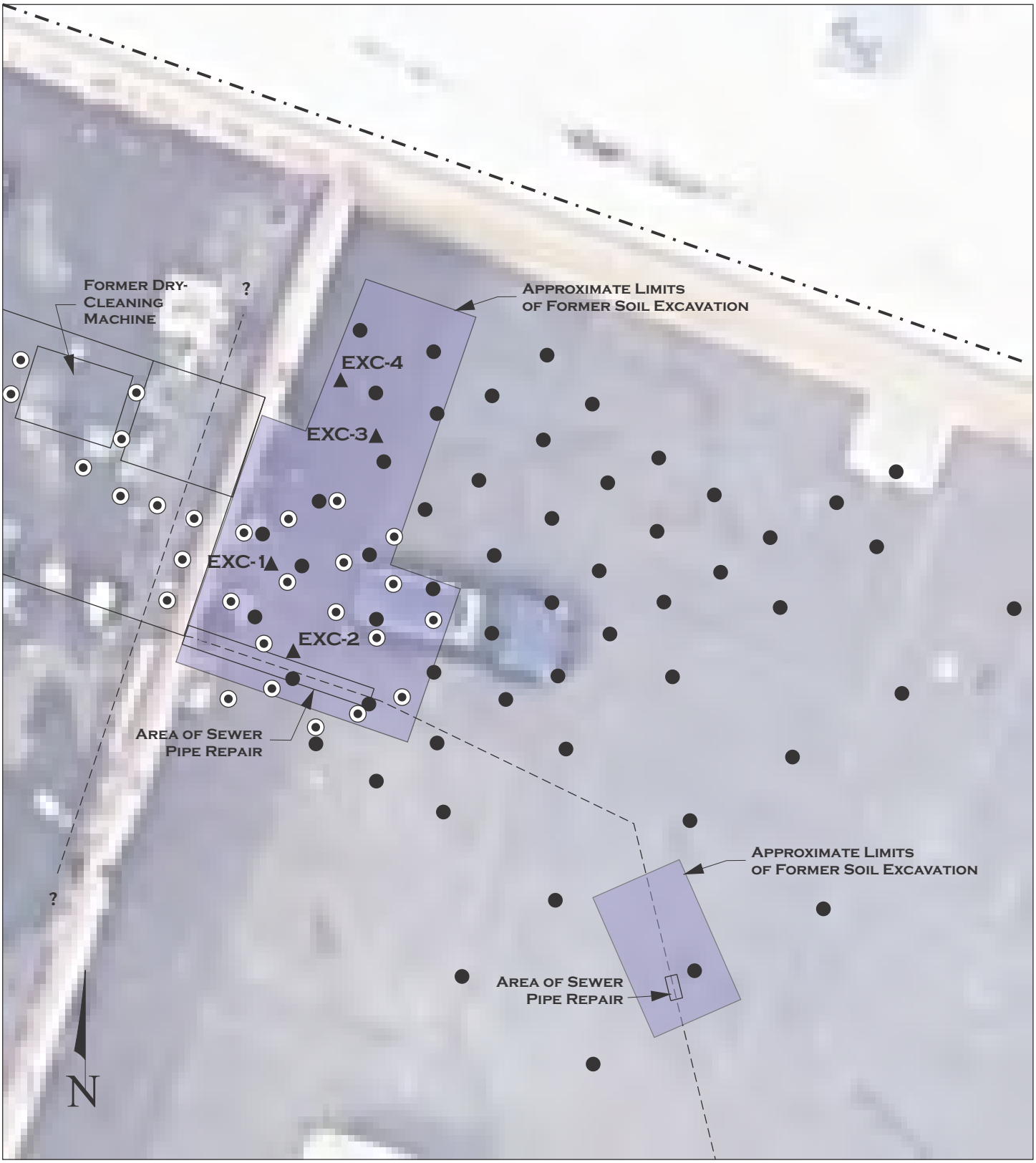
Exploration Locations

Project Address:

26112 Pacific Hwy South
Kent, WA 98144

Figure:

4



UEPllc

LEGEND

- ● HRC Injection Point (1998)
- ◉ HRC Injection Point (2000)
- ▲ Excavation Soil Sample Location

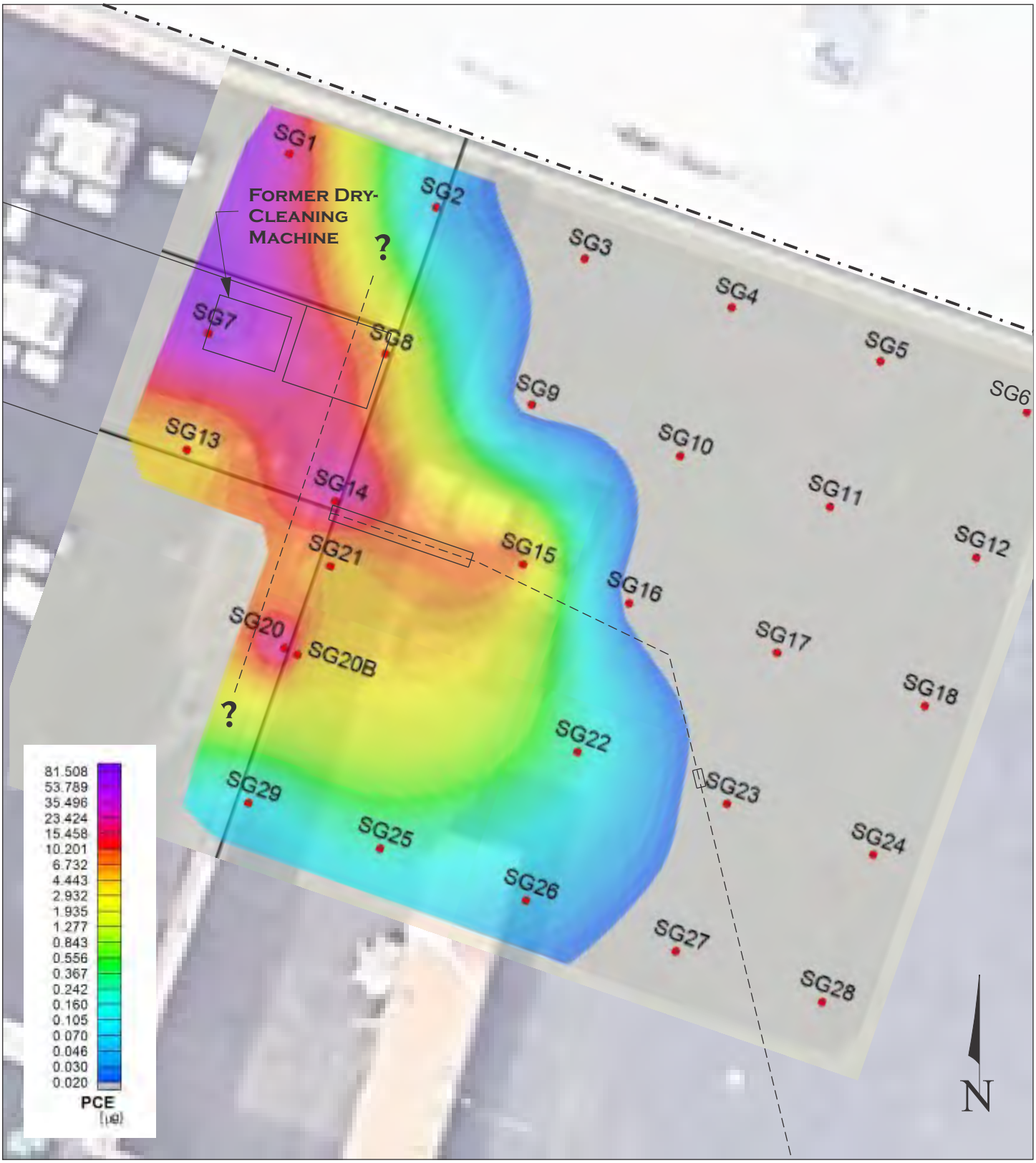
Interim Actions

Project Address:

26112 Pacific Hwy South
Kent, WA 98144

Figure:

5



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LEGEND

- Gore Sorber Probe
- Side Sewer Line

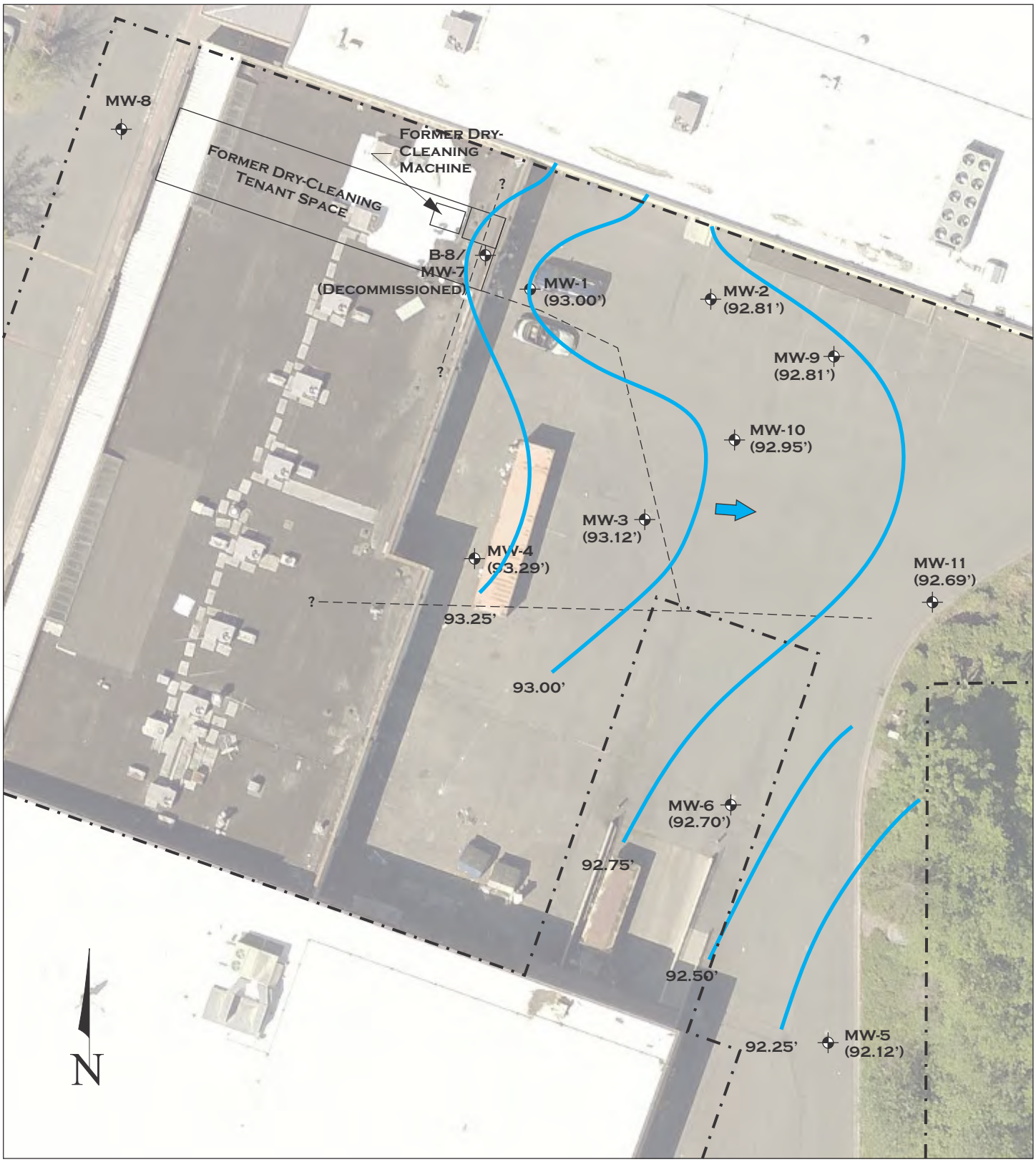
Passive Soil Vapor Assessment

Project Address:

26112 Pacific Hwy South
Kent, WA 98144

Figure:

6



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LEGEND

- Monitoring Well
- Proposed Monitoring Well
- Groundwater Contour Line
- Groundwater Flow Direction (7/22/21)

GW Contour Map

Project Address:

26112 Pacific Hwy South
Kent, WA 98144

Figure:

7

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LEGEND

- cVOC Concentration Exceeds Cleanup Level
- Sample Location Overexcavated

cVOCs in Soil

Project Address:

26112 Pacific Hwy South
Kent, WA 98144

Figure:

8

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LEGEND

- cVOC Concentration Exceeds Cleanup Level
- Groundwater Flow Direction (7/22/21)

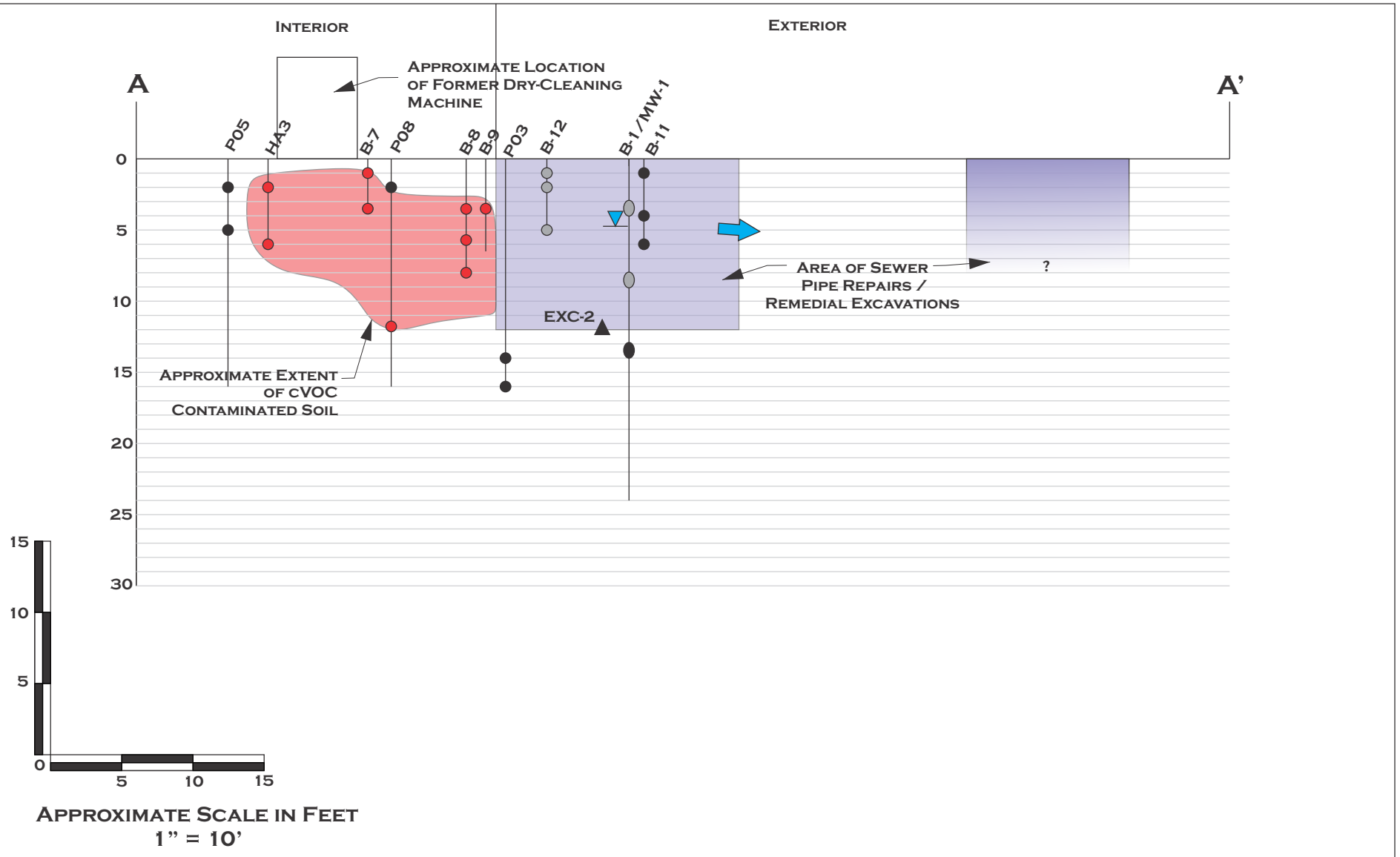
cVOCs in GW

Project Address:

26112 Pacific Hwy South
Kent, WA 98144

Figure:

9



UEPllc

LEGEND

- cVOC CONCENTRATION(S) EXCEED CLEANUP LEVEL
- cVOC CONCENTRATION(S) WERE NOT DETECTED OR WERE DETECTED BELOW CLEANUP LEVELS
- SAMPLE LOCATION OVEREXCAVATED

CROSS SECTION A-A'

PROJECT ADDRESS:

26112 PACIFIC HWY SOUTH
KENT, WA 98144

FIGURE:

10

Exhibit B: Tables

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Table 1
Soil Analytical Results for cVOCs
26112 Pacific Hwy South, Kent

Boring ID	Sample ID	Sampled By	Date Sampled	Depth (ft/bgs)	Analytical Results[1] - Milligrams per Kilogram (mg/kg)				
					PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
B1	B1-4	EMG	8/31/1998	4	**0.009**	<0.004	<0.004	<0.004	<0..004
	B1-11	EMG	8/31/1998	11	**0.333**	<0.004	<0.004	<0.004	<0.004
B2	B2-4	EMG	8/31/1998	4	**0.546**	**0.033**	**0.209**	**0.005**	<0.004
	B2-11	EMG	8/31/1998	11	**3.00**	<0.004	**0.012**	<0.004	<0.004
HA3	HA3-2	EMG	8/31/1998	2	**0.099**	**0.022**	**0.015**	<0.004	<0.004
	HA3-6	EMG	8/31/1998	6	**0.221**	**0.008**	**0.011**	<0.004	<0.004
HA4	HA4-1	EMG	8/31/1998	1	**0.032**	<0.004	<0.004	<0.004	<0.004
	HA4-5	EMG	8/31/1998	5	**0.035**	<0.004	<0.004	<0.004	<0.004
B-1	B-1-1	EAI	9/21/1998	3-4	**0.22**	<0.057	<0.057	<0.057	<0.057
	B-1-2			8-9	<0.057	<0.057	<0.057	<0.057	<0.057
	B-1-3			13-14	<0.058	<0.058	<0.058	<0.058	<0.058
	B-1-4			18-19	<0.055	<0.055	<0.055	<0.055	<0.055
B-2	B-2-2	EAI	9/21/1998	8-9	<0.068	<0.068	<0.068	<0.068	<0.068
	B-2-3			13-14	<0.054	<0.054	<0.054	<0.054	<0.054
B-3	B-3-2	EAI	9/21/1998	8-9	<0.057	<0.057	<0.057	<0.057	<0.057
	B-3-3			13-14	**0.2**	<0.057	<0.057	<0.057	<0.057
B-4	B-4-1	EAI	9/22/1998	3-4	<0.062	<0.062	<0.062	<0.062	<0.062
	B-4-2			8-9	<0.056	<0.056	<0.056	<0.056	<0.056
	B-4-3			13-14	<0.058	<0.058	<0.058	<0.058	<0.058
B-5	B-5-2	EAI	9/22/1998	8-9	<0.065	<0.065	<0.065	<0.065	<0.065
	B-5-3			13-14	<0.056	<0.056	<0.056	<0.056	<0.056
B-6	B-6-2	EAI	9/22/1998	8-9	<0.058	<0.058	<0.058	<0.058	<0.058
	B-6-3			13-14	<0.056	<0.056	<0.056	<0.056	<0.056
B-7	B-7-1	EAI	9/28/1998	1	**0.38**	<0.056	0.13	<0.056	<0.056
	B-7-3			3.5	**0.14**	<0.13	<0.13	<0.13	<0.13
B-8	B-8-3	EAI	9/28/1998	3.5	**0.18**	<0.14	<0.14	<0.14	<0.14
	B-8-4			5.7	**0.41**	<0.12	<0.12	<0.12	<0.12
	B-8-5			8	**0.12**	<0.11	<0.11	<0.11	<0.11
B-9	B-9-3	EAI	9/28/1998	3.5	**0.15**	<0.13	<0.13	<0.13	<0.13
	B-9-5			6.5	**0.18**	<0.11	<0.11	<0.11	<0.11
B-11	B-11 @1'	EAI	3/25/1999	1	<0.055	<0.056	**0.072**	<0.055	<0.055
	B-11 @ 4'			4	<0.062	<0.062	**0.350**	<0.062	<0.062
	B-11 @ 6'			6	<0.055	<0.055	**0.250**	<0.055	<0.055
B-12	B-12 @ 1'	EAI	3/25/1999	1	**0.230**	<0.058	**8.200**	**0.300**	<0.058
	B-12 @ 2'			2	**0.200**	<0.057	**0.400**	<0.057	<0.057
	B-12 @ 5'			5	**3.800**	**1.200**	**0.810**	<0.063	<0.063
EXC	EXC-1	EAI	4/22/1999	10	<0.056	<0.056	<0.056	<0.056	<0.056
EXC	EXC-2	EAI	4/22/1999	12	<0.054	<0.054	<0.054	<0.054	<0.054
EXC	EXC-3	EAI	4/22/1999	12	**0.18**	<0.056	<0.056	<0.056	<0.056
EXC	EXC-4	EAI	4/23/1999	10	<0.056	<0.056	<0.056	<0.056	<0.056
P01	P01-06	SES	9/29/2017	6	<0.025	<0.02	<0.05	<0.05	<0.05
	P01-12			12	<0.025	<0.02	<0.05	<0.05	<0.05
P02	P02-06	SES	9/29/2017	6	<0.025	<0.02	<0.05	<0.05	<0.05
	P02-12			12	<0.025	<0.02	<0.05	<0.05	<0.05
P03	P03-14	SES	9/29/2017	14	<0.025	<0.02	<0.05	<0.05	<0.05
	P03-16			16	<0.025	<0.02	<0.05	<0.05	<0.05
P04	P04-06	SES	9/29/2017	6	<0.025	<0.02	<0.05	<0.05	<0.05
	P04-10			10	<0.025	<0.02	<0.05	<0.05	<0.05
P05	P05-02	SES	9/29/2017	2	**0.028**	<0.02	<0.05	<0.05	<0.05
	P05-05			5	<0.025	<0.02	<0.05	<0.05	<0.05

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Table 1
Soil Analytical Results for cVOCs
26112 Pacific Hwy South, Kent

Boring ID	Sample ID	Sampled By	Date Sampled	Depth (ft/bgs)	Analytical Results[1] - Milligrams per Kilogram (mg/kg)				
					PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
P06	P06-02	SES	9/29/2017	2	<0.025	<0.02	<0.05	<0.05	<0.05
	P06-08			8	<0.025	<0.02	<0.05	<0.05	<0.05
P07	P07-02	SES	9/29/2017	2	<0.025	<0.02	<0.05	<0.05	<0.05
	P07-06			6	<0.025	<0.02	<0.05	<0.05	<0.05
P08	P08-02	SES	9/29/2017	2	<0.025	<0.02	<0.05	<0.05	<0.05
	P08-12			12	**0.47**	**0.28**	<0.05	<0.05	<0.05
Ecology MTCA Method A Cleanup Levels[2] Unless Otherwise Specified					**0.05**	**0.03**	**160[3]**	**1,600[3]**	**0.67[4]**

Notes:

Red denotes concentration exceeding MTCA cleanup level.
< = Not Detected at a concentration exceeding the specified laboratory reporting limit (RL).
(1) Analyzed by EPA Method 8260C or 8260D.
(2) MTCA Cleanup Regulation, Chapter 173-340 of WAC, Table 740-1 Method A Cleanup Levels for Soil, revised 2013.
(3) MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC Soil, Method B Noncancer, Direct Contact, CLARC Website: <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>
(4) MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC Soil, Method B Cancer, Direct Contact, CLARC Website: <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>

bgs = below grade surface
WAC = Washington Administrative Code
EPA = U.S. Environmental Protection Agency
cVOCs: Chlorinated Volatile Organic Compounds
PCE = tetrachloroethylene
TCE = trichloroethylene
DCE = dichloroethylene
VC = Vinyl Chloride
MTCA = Washington Model Toxics Control Act.

EAI = Environmental Associates Inc.
SES = SoundEarth Strategies, Inc.

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Table 2
Groundwater Analytical Results for CVOCs
26112 Pacific Hwy South, Kent

Boring/Well ID	Sample ID	Sampled By	Date Sampled	Analytical Results - Micrograms per Liter (µg/L)				
				PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
B1	WB1-8	EMG	8/31/1998	11,300	<4	357	<4	<4
MW-1	MW-1	EAI	9/23/1998	160	86	170	1.7	<1
	MW-1	EAI	12/14/1998	551	139	522	5.4	<1
	MW-1	EAI	1/14/1999	40,800	235	914	5.2	<1
	MW-1	EAI	2/16/1999	67,400	796	965	2.9	<1
	MW-1	EAI	3/16/1999	60,900	1,630	1,360	3.4	<1
	MW-1	EAI	5/19/1999	34,800	11,700	1,140	<10	<10
	MW-1	EAI	6/30/1999	2,790	3,990	987	<25	<25
	MW-1	EAI	7/28/1999	1,150	2,620	4,770	<25	<25
	MW-1	EAI	9/16/1999	559	1,020	9,310	<25	<25
	MW-1	EAI	11/9/1999	259	404	9,940	<50	<50
	MW-1	EAI	1/19/2000	368	224	951	<5	29
	MW-1	EAI	8/18/2000	110	95	1,200	<20	980
	MW-1	EAI	9/26/2000	63	30	910	<20	960
	MW-1	EAI	10/26/2000	32	<20	430	<20	500
	MW-1	EAI	12/6/2000	34	17	530	5.4	690
	MW-1	EAI	2/14/2001	22	17	460	5.3	930
	MW-1	EAI	4/16/2001	3.9	3.5	290	3.0	930
	MW-1	EAI	6/26/2001	<2.0	<2.0	90	<2.0	420
	MW-1	EAI	9/19/2002	0.64	1.2	14	<0.2	0.27
	MW-1	EAI	1/27/2003	0.83	1.4	16	0.25	1.6
	MW-1	EAI	7/16/2003	<0.2	<0.2	0.90	<0.2	0.89
	MW-1	EAI	11/7/2003	<0.2	<0.2	2.7	0.40	6.1
	MW-1	EAI	2/26/2004	<0.2	<0.2	0.41	<0.2	0.40
	MW-1	EAI	6/1/2004	<0.2	<0.2	0.24	<0.2	0.29
	MW-1	EAI	10/27/2004	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-1	EAI	1/31/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-1	EAI	6/16/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-1	EAI	10/3/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW01-72420	UEP	7/24/2020	<1	<1	2.3	<1	5.0
MW-2	MW-2	EAI	9/23/1998	45	3.2	6.4	<1	<1
	MW-2	EAI	12/14/1998	10.8	<1	<1	<1	<1
	MW-2	EAI	1/14/1999	1.4	<1	<1	<1	<1
	MW-2	EAI	2/16/1999	1.3	<1	<1	<1	<1
	MW-2	EAI	3/16/1999	7.2	<1	<1	<1	<1
	MW-2	EAI	5/19/1999	2.3	<1	<1	<1	<1
	MW-2	EAI	6/30/1999	2.8	<1	<1	<1	<1
	MW-2	EAI	7/28/1999	<1	<1	<1	<1	<1
	MW-2	EAI	9/16/1999	<1	5.1	<1	<1	<1
	MW-2	EAI	11/9/1999	<1	1.8	<1	<1	<1
	MW-2	EAI	1/19/2000	<1	7.6	<1	<1	<1
	MW-2	EAI	8/18/2000	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-2	EAI	9/26/2000	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-2	EAI	10/26/2000	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-2	EAI	12/6/2000	<0.2	<0.2	0.22	<0.2	<0.2
	MW-2	EAI	2/14/2001	<0.2	<0.2	0.36	<0.2	<0.2
	MW-2	EAI	4/16/2001	<0.2	<0.2	<0.2	<0.2	<0.2

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Table 2
Groundwater Analytical Results for CVOCs
26112 Pacific Hwy South, Kent

Boring/Well ID	Sample ID	Sampled By	Date Sampled	Analytical Results - Micrograms per Liter (µg/L)				
				PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
MW-2	MW-2	EAI	6/26/2001	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-2	EAI	1/27/2003	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-2	EAI	11/7/2003	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-2	EAI	2/26/2004	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-2	EAI	6/1/2004	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-2	EAI	10/27/2004	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-2	EAI	1/31/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-2	EAI	6/16/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-2	EAI	10/3/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-2-20170908	SES	9/8/2017	<1	<1	**3.5**	<1	**2.9**
	MW02-72420	UEP	7/24/2020	<1	<1	**3.2**	<1	**1.8**
MW-3	MW-3	EAI	9/23/1998	**6.8**	**9.1**	**440**	**3.9**	**80**
	MW-3	EAI	12/14/1998	**60.6**	**35.1**	**360**	<1	**57.4**
	MW-3	EAI	1/14/1999	**58.9**	**31.0**	**295**	**1.8**	**27.0**
	MW-3	EAI	2/16/1999	**57.7**	**23.2**	**188**	<1	**13.5**
	MW-3	EAI	3/16/1999	**44.2**	**16.6**	**115**	<1	**10.6**
	MW-3	EAI	5/19/1999	**3.4**	**11.5**	**89.4**	<1	**7.5**
	MW-3	EAI	6/30/1999	<1	<1	**138**	<1	**53.4**
	MW-3	EAI	7/28/1999	<1	<1	**91.3**	<1	**137**
	MW-3	EAI	9/16/1999	<1	<1	**43.8**	**2.3**	**220**
	MW-3	EAI	11/9/1999	<1	<1	**13**	**1.5**	**174**
	MW-3	EAI	1/19/2000	<1	<1	**9.2**	<1	**58.8**
	MW-3	EAI	8/18/2000	<2	<2	**19**	<2	**48**
	MW-3	EAI	9/26/2000	<0.2	**1.8**	**36**	**1.6**	**82**
	MW-3	EAI	10/26/2000	<0.2	**3.5**	**24**	**1.2**	**66**
	MW-3	EAI	12/6/2000	<0.2	**0.41**	**15**	**1.4**	**67**
	MW-3	EAI	2/14/2001	<0.2	**0.51**	**11**	**0.87**	**38**
	MW-3	EAI	4/16/2001	<0.2	**0.42**	**4.9**	**0.59**	**20**
	MW-3	EAI	6/26/2001	<0.2	**0.45**	**11**	**1.1**	**42**
	MW-3	EAI	9/19/2002	**0.62**	**1.2**	**15**	**0.27**	**0.32**
	MW-3	EAI	1/27/2003	**0.28**	**0.50**	**6.4**	<0.2	**0.42**
	MW-3	EAI	7/16/2003	<0.2	<0.2	**0.46**	<0.2	**0.46**
	MW-3	EAI	8/25/2003	**0.35**	**0.33**	**4.4**	**0.26**	**5.4**
	MW-3	EAI	11/7/2003	<0.2	<0.2	**1.5**	**0.36**	**3.2**
	MW-3	EAI	2/26/2004	<0.2	<0.2	<0.2	<0.2	**0.26**
	MW-3	EAI	6/1/2004	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-3	EAI	10/27/2004	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-3	EAI	1/31/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-3	EAI	6/16/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-3	EAI	10/3/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-3-20170908	SES	9/8/2017	<1	<1	**1.8**	<1	**2.2**
	MW03-72420	UEP	7/24/2020	<1	<1	1.0	<1	**0.99**
MW-4	MW-4	EAI	9/23/1998	<1	<1	<1	<1	<1
	MW-4	EAI	1/27/2003	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-4	EAI	11/7/2003	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-4	EAI	6/1/2004	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-4	EAI	1/31/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-4	EAI	6/16/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-4	EAI	10/3/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-4-20170908	SES	9/8/2017	<1	<1	<1	<1	<0.2
	MW04-72420	UEP	7/24/2020	<1	<1	<1	<1	<0.2

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Table 2
Groundwater Analytical Results for CVOCs
26112 Pacific Hwy South, Kent

Boring/Well ID	Sample ID	Sampled By	Date Sampled	Analytical Results - Micrograms per Liter (µg/L)				
				PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
MW-5	MW-5	EAI	9/23/1998	<1	<1	<1	<1	<1
	MW-5	EAI	1/31/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-5	EAI	10/3/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-5-20170908	SES	9/8/2017	<1	<1	<1	<1	<0.2
	MW05-72420	UEP	7/24/2020	<1	<1	<1	<1	<0.2
MW-6	MW-6	EAI	9/23/1998	<1	<1	<1	<1	<1
	MW-6	EAI	9/26/2000	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-6	EAI	4/16/2001	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-6	EAI	1/27/2003	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-6	EAI	11/7/2003	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-6	EAI	6/1/2004	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-6	EAI	10/27/2004	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-6	EAI	1/31/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-6	EAI	6/16/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-6	EAI	10/3/2005	<0.2	<0.2	<0.2	<0.2	<0.2
	MW-6-20170908	SES	9/8/2017	<1	<1	<1	<1	<0.2
	MW06-72420	UEP	7/24/2020	<1	<1	<1	<1	<0.2
B-8 (MW-7)	Well B-8	EAI	3/16/1999	**170**	**5.6**	**26**	<1	<1
P02	P02-20170929	SES	9/29/2017	**16**	**20**	**42**	<1	**4.5**
P04	P02-20170929	SES	9/29/2017	**6**	**19**	**12**	<1	<0.02
P05	P02-20170929	SES	9/29/2017	**12**	**2.5**	**16**	<1	<0.02
MW-8	MW08-20201125	UEP	11/25/2020	<1	<1	<1	<1	<0.2
MW-9	MW09-20201125	UEP	11/25/2020	<1	<1	<1	<1	<0.2
Ecology MTCA Method A Cleanup Levels[2] Unless Otherwise Specified				**5**	**5**	**16[3]**	**160[3]**	**0.2**

Notes:

Red denotes concentration exceeding MTCA cleanup level.
< = Not Detected at a concentration exceeding the specified laboratory reporting limit (RL).
(1) Analyzed by EPA Method 8260C or 8260D.
(2) MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 720-1 Method A Cleanup Levels for Groundwater, revised November 2007.
(3) MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Groundwater, Method B, Non cancer, CLARC Website <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>

WAC = Washington Administrative Code
EPA = U.S. Environmental Protection Agency
cVOCs: Chlorinated Volatile Organic Compounds
PCE = tetrachloroethylene
TCE = trichloroethylene
DCE = dichloroethylene
VC = Vinyl Chloride
MTCA = Washington Model Toxics Control Act.

UEP = Urban Environmental Partners llc
EAI = Environmental Associates Inc.
SES = SoundEarth Strategies, Inc.

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Table 3
Sewer Discharge Analytical Results for cVOCs
26112 Pacific Hwy South, Kent

Boring/Well ID	Sample ID	Sampled By	Date Sampled	Analytical Results - Micrograms per Liter (µg/L)				
				PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
Sewer Effluent	Sewer Effluent	EAI	3/16/1998	**1.5**	ND	ND	ND	--
	Sewer Effluent	EAI	2/16/1999	**190**	ND	ND	ND	--
	Sewer Effluent	EAI	3/16/1999	**26**	ND	ND	ND	--
	Sewer Effluent	EAI	5/19/1999	**7.1**	ND	ND	ND	--
	Sewer Effluent	EAI	6/30/1999	**10**	ND	ND	ND	--
	Sewer Effluent	EAI	7/28/2021	ND	ND	ND	ND	--
	Sewer Effluent	EAI	9/17/1999	**4.1**	ND	ND	ND	--
	Sewer Effluent	EAI	1/19/2000	**2.4**	ND	ND	ND	--
	Sewer Effluent	EAI	12/6/2000	<0.2	<0.2	<0.2	<0.2	<0.2
	Sewer Effluent	EAI	2/14/2001	**6.1**	<0.2	<0.2	<0.2	<0.2
Ecology MTCA Method A Cleanup Levels[2] Unless Otherwise Specified				**5**	**5**	**16[3]**	**160[3]**	**0.2**

Notes:

Red denotes concentration exceeding MTCA cleanup level.
< = Not Detected at a concentration exceeding the specified laboratory reporting limit (RL).
(1) Analyzed by EPA Method 8260C or 8260D.
(2) MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 720-1 Method A Cleanup Levels for Groundwater, revised November 2007.
(3) MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC, Groundwater, Method B, Non cancer, CLARC Website <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>

WAC = Washington Administrative Code
EPA = U.S. Environmental Protection Agency
cVOCs: Chlorinated Volatile Organic Compounds
PCE = tetrachloroethylene
TCE = trichloroethylene
DCE = dichloroethylene
VC = Vinyl Chloride
MTCA = Washington Model Toxics

EAI = Environmental Associates Inc.

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Table 4
Soil Vapor and Air Analytical Results for cVOCs
26112 Pacific Hwy South, Kent

Sample ID	Sampled By	Date Sampled	Sample Type	Analytical Results[1] - Micrograms per Cubic Meter (µg/m^3)				
				PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC
B-8	EAI	11/19/2009	Sub-Slab	<76	88	2,000	<44	7,800
SS01	SES	9/29/2017	Sub-Slab	67,000	530	110	<79	<51
SS-1	Partner	10/22/2018	Sub-Slab	<2.72	<2.14	<1.59	<1.59	<1.02
SS-2	Partner	10/22/2018	Sub-Slab	<2.72	<2.14	<1.59	<1.59	1.42
SS-3	Partner	10/22/2018	Sub-Slab	4.32	<2.14	<1.59	<1.59	<1.02
SS-4	Partner	10/22/2018	Sub-Slab	9.27	6.53	13.7	<1.59	11.3
Sub Slab	Dixon ES	6/15/2019	Sewer Gas	2,400	650	<16	<16	<10
Ecology MTCA Method B Screening Levels for Sub-Slab Soil Gas[2]				**320**	**11**	**NE**	**NE**	**9.50**
BZ	EAI	5/27/2008	Indoor Air	6.6	0.42	0.21	<0.57	<0.037
FZ	EAI	5/27/2008	Indoor Air	8.3	0.36	0.58	<0.54	<0.035
Table-Night	EAI	1/20/2009	Indoor Air	4.1	0.34	<0.11	<0.53	<0.034
Floor-Night	EAI	1/20/2009	Indoor Air	6.6	0.44	0.22	<0.53	<0.034
Table-Day	EAI	1/20/2009	Indoor Air	2.1	0.21	<0.11	<0.54	<0.035
Floor-Day	EAI	1/20/2009	Indoor Air	3.3	0.22	<0.11	<0.54	<0.035
IA1	Partner	11/16/2018	Indoor Air	<0.136	<0.107	<0.0793	<0.0793	<0.0511
IA2	Partner	11/16/2018	Indoor Air	0.143	<0.107	<0.0793	<0.0793	<0.0511
IA3	Partner	11/16/2018	Indoor Air	0.152	<0.107	<0.0793	<0.0793	<0.0511
IA4	Partner	11/16/2018	Indoor Air	0.156	<0.107	<0.0793	<0.0793	<0.0511
IA5	Partner	11/16/2018	Indoor Air	0.155	<0.107	<0.0793	<0.0793	<0.0511
AA1	Partner	11/16/2018	Ambient Air	<0.136	<0.107	<0.0793	<0.0793	<0.0511
Indoor Air	Dixon ES	6/15/2019	Indoor Air	<6.8	<0.27	<0.4	<0.4	<0.26
Ambient Air	Dixon ES	6/15/2019	Ambient Air	<6.8	<0.27	<0.4	<0.4	<0.26
Ecology MTCA Method B Indoor Air Cleanup Level[3]				**9.62**	**0.33**	**NE**	**NE**	**0.284**

Notes:

Red denotes concentration exceeding MTCA screening level or Cleanup Level.
< or ND = Not Detected at a concentration exceeding the specified laboratory reporting limit (RL).
(1) Samples analyzed by U.S. EPA Method TO-15
(2) Most Conservative MTCA Method B Sub-Slab Soil Gas Screening Level, CLARC Master Spreadsheet January 2020.
(3) Most Conservative MTCA Method B Indoor Air Cleanup Level, CLARC Master CLARC Master Spreadsheet January 2020..

NE = Not Established
cVOCs: Chlorinated Volatile Organic Compounds
PCE = tetrachloroethylene
TCE = trichloroethylene
DCE = dichloroethylene
VC = Vinyl Chloride
WAC = Washington Administrative Code
EAI = Environmental Associates Inc.

MTCA = Washington Model Toxics Control Act.
SES = SoundEarth Strategies, Inc.
Partner = Partner Engineering and Science
Dixon ES = Dixon Environmental Services LLC

Appendix A: Laboratory Analytical Reports

Appendix B: Boring Logs

Appendix C: Regulatory Correspondence