

# RESIDUAL RISK ASSESSMENT



#### **Former Union Cleaners II Site**

1220 S Main Street Lebanon, Oregon

Agency Information
ECSI File Number 1699

**Prepared for:** 

## HUI, Inc.

Attn: William Rauch 884 Park Lebanon, Oregon 97335

Issued on:

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#### This

# Residual Risk Assessment

Report for:

#### **Former Union Cleaners II Site**

1220 S Main Street Lebanon, Oregon

Has been prepared for the sole benefit and use of our Client:

### HUI, Inc.

Attn: William Rauch 884 Park Lebanon, Oregon 97335

and its assignees

Issued August 14, 2023 by:

CERTIFIED
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# List of Acronyms and Abbreviations

bgs below ground surface

Client HUI, Inc.

CMMP Contaminated Media Management Plan

COCs constituents of concern

COPCs constituents of potential concern

DCE dichloroethene

DNAPL dense non-aqueous phase liquids

ECSI Environmental Cleanup Site Information

EES easement and equitable servitude

ENW EVREN Northwest, Inc.

IRAM Interim Remedial Action Measure

ISCR in situ chemical reduction

LOF Locality of Facility µg/L micrograms per Liter

ODEQ Oregon Department of Environmental Quality

PCE tetrachloroethene

RBCs risk-based concentrations

RBDM ODEQ's Risk-Based Decision Making for the Remediation of Contaminated Sites guidance

document

ROW right of way

SLRBCs screening-level risk-based concentrations

SSD sub-slab depressurization

TCE trichloroethene VC vinyl chloride

VISL Vapor Intrusion Screening Level

VC vinyl chloride

#### 1.0 Introduction

At the request of HUI, Inc. (Client), EVREN Northwest, Inc. (ENW) prepared this Residual Risk Assessment at the subject site (Former Union Cleaners II Site, 1220 S Main Street, Lebanon, Oregon; see Figures 1 and 2).

This report uses the results of previous investigations and further evaluates residual conditions following implementation of a shallow ground water remediation plan through a residual risk assessment, and recommends next steps needed to mitigate/remediate identified risks, if any. The purpose of this report is to show that there is no remaining unacceptable risk at the subject site based on current development and controls in place.

## 2.0 Scope of Work

ENW completed the following Scope of Work for this project:

- Reviewed previous data collected by ENW and others for this project.
- Evaluated analytical results with respect to ODEQ risk-based guidance documents.
- Prepared this report documenting residual risk at the subject property, if any, and recommendations for next steps to obtain regulatory site closure.

# 3.0 Site Setting

**Description and Location. Description and Location.** The subject property is located at 1220 Main Street in the City of Lebanon, Linn County, Oregon, and is approximately 0.62 acres in area (see Figures 1 and 2). Main Street borders the east side of the property, and Elmore Street borders the north side. A motel borders the property to the south. Mixed residential and commercial properties are located further north of the site. Across Main Street to the east are mostly commercial properties. The one-story commercial building on the site contains multiple tenant spaces and is situated in the eastern portion of the site; an asphalt parking lot is located in the western portion of the site. The former Union Cleaners II tenant space is currently occupied by a convenience store.

The City of Lebanon has zoned the subject property Z-HCM – Highway Commercial Zone. Properties to the north, east, and south are similarly zoned. Adjacent properties to the west are zoned Z-RH – Residential High Density.

**Topography.** The subject site is located within the U.S. Geological Survey Lebanon, Oregon Quadrangle at an elevation of approximately 349 feet (Figure 1). The regional topographic slope in the vicinity of the site is gently northward.

**Geologic and Hydrogeologic Setting.** Lebanon is located at the eastern margin of the Willamette Valley, where the South Santiam River emerges from the Western Cascade Range. The Cascades Range is composed of uplifted volcanic and volcaniclastic rocks of Oligocene to Recent age. The South Santiam River has its headwaters in the Cascade Range and flows westward through a generally narrow canyon

until reaching the western margin of the foothills near Lebanon. At Lebanon, the Willamette Valley opens up into a broad alluvial basin that is both structurally and erosionally controlled. As described by Yeats (2002)<sup>1</sup>, the southern Willamette Valley is a strike valley underlain by erosionally weak and down-warped late Eocene marine sedimentary rocks (e.g., Eugene Formation) and middle Miocene Columbia River Basalt Group lavas, overlain by younger, more resistant Western Cascade volcanic rocks to its east.

The Willamette Valley is floored with a variety of basin-fill sediments principally originated from the surrounding highlands, but which also includes flood and lacustrine sediments from the late Pleistocene Missoula Floods originating in the Columbia Plateau but flowed into the Valley through the Columbia Gorge. Gannett and Caldwell (1998)<sup>2</sup> determined the Lebanon vicinity is located within the Southern Willamette Valley Sub-Basin. Within this Sub-Basin the youngest deposits are Holocene alluvium, occupying the streambeds and flood plains of active streams. The next oldest sedimentary unit is the Willamette Silt unit, which consists of silts, clays, and fine sands deposited by the late Pleistocene Missoula Floods during impoundments of the main Columbia River channel downstream of Portland (Oregon). These deposits mantle most of the lowlands (below an elevation of 400 feet above mean sea level) of the Willamette Valley except where Holocene streams are active.

Beneath the Willamette Silt, Gannett, and Caldwell (1998) describe interbedded coarse-grained and fine-grained Basin-fill Sediments. These Coarse-grained Basin-fill Sediments are predominantly sands and gravels of Cascade Range provenance, especially in the eastern portion of the Willamette Valley. Where major streams discharge into the Willamette Valley, these coarse sediments were deposited as alluvial fans, with the proximal fan deposits resting directly on underlying bedrock and forming the entire sedimentary sequence above the bedrock materials and locally extending to below sea level. The coarse sediments of the fans grade into finer-grained deposits downstream and away from the fans; however, at least two pulses of coarse sediments extend substantially westward into the Valley from the fans. The two pulses were interpreted to correlate with structural episodes of uplift of source areas to the east (Gannett, 2002³, Gannett and Caldwell, 1998). The Fine-Grained Basin-Fill Sediments are composed of silts, fine sands, and clayey materials, deposited during more quiescent depositional time intervals, and probably represent the distal facies of the alluvial fans near Lebanon, but further west, represent the sediments produced by Coast Range streams. At the bottom of the interbedded Basin-fill Sediments, fine-grained Basin-Fill Sediments directly overlie Columbia River Basalt Group lavas and marine sedimentary rocks that characterize the Coast Range.

The following is a summary of the geologic units identified beneath the site, presented in order of increasing depth.

**Fill:** The fill underlies the building and parking lot pavement to varying depths.

**Surficial Fine-Grained Sediments.** A medium stiff to stiff silty clay to clayey silt that is mottled dark gray to black, brown, or gray-green, moist to wet, and occasionally contains fine sandy silt and abundant

<sup>&</sup>lt;sup>1</sup> Yeats, R.S. 2002. Tectonic setting of the Willamette Valley [abstract]: Geological Society of America, Cordilleran Section-98<sup>th</sup> Annual Meeting (May 13-15, 2002).

<sup>&</sup>lt;sup>2</sup> Gannett, M.W., and Caldwell, R.R. 1998. Geologic framework of the Willamette Lowland Aquifer System, Oregon and Washington: US Geological Survey, Professional Paper 1424-A, 32 p., maps (1:250,000).

<sup>&</sup>lt;sup>3</sup> Gannett, M.W. 2002. Neogene sedimentation in the Willamette Valley, Oregon [abstract]: Geological Society of America, Cordilleran Section, 98<sup>th</sup> Annual Meeting, May 13-15.

organics. Appears to correlate with the Willamette Silt, which originated as a fine-grained deposit of the Missoula Floods. Thickness ranges from 4 to 11 feet at the subject property.

**Shallow Gravel Unit.** A loose to very dense sandy gravel that is dry to wet, with multi-colored well-rounded and well-graded clasts in a weakly to strongly cemented silty clay to silty sand matrix. Thickness ranges from 43.5 to 52.2 feet. There are the following corresponding hydrogeologic units contained within the shallow gravel unit:

- Shallow Ground Water Unit (uppermost aquifer below the site): composed of loose, sandy gravel and extending from approximately 7 feet below ground surface (bgs) to between 20 and 24 feet bgs. The depth to ground water monitoring data from wells installed in the shallow aquifer shows up to around 2.5 feet in seasonal ground water fluctuation ranging from approximately 2.6 to 8.2 feet below top of casing, suggesting possible confining pressures within this water-bearing unit. Potentiometric surfaces in the shallow ground water reflect flows in a west to northwesterly ground water flow direction.
- *Upper Confining Unit*: composed of consolidated gravel with silty sand or clayey silt matrix, extending downward to approximately 50 feet bgs. May not be continuous across the site.
- Intermediate-Depth Ground Water Unit: composed of a sandy water-bearing unit with lenses of sandy gravel, extending from about 50 feet bgs to 60 feet bgs. However, the thickness of the unit appeared to be variable in ENW's borings. The potentiometric surface ranges from approximately 4 to just over 10 feet below top of casing, suggesting this water-bearing unit is confined. The intermediate-depth ground water flows in a northerly to northwesterly direction.

**Sand and Gravel Unit**. Loose to very dense, silty sandy gravel, dry to wet, with multi-colored, well-rounded, and well-graded clasts in a weakly to strongly cemented silty clay to sandy silt matrix with horizontal iron and manganese banding. Total thickness not determined by ENW. The corresponding hydrogeologic units are identified below.

- Lower Confining Unit: composed of a cemented gravel in a sandy and silty matrix, extending to approximately 70 to 75 feet depth. The unit also contains a relatively thick silt lens near EMW3-D, at about 10 feet thick.
- Deep Ground Water Unit: composed of sandy gravel. The potentiometric surface ranges from approximately 3.4 to 11.5 feet below top of casing, and deep ground water flows in a north to northeasterly direction. The bottom of this unit has not been determined at the site.

# 4.0 Overview of Environmental History

Releases of dry-cleaning solvent (tetrachloroethene, also known as PCE) at the Union Cleaners II facility likely occurred during the years it operated as a dry-cleaning facility (approximately 1953 to 1985). Union Cleaners II ceased operations at the site around 1986.

Extensive discussions of the operational and environmental background of the Union Cleaners II site is included in ENW's Subsurface Investigation and Interim Remedial Action Plan<sup>4</sup> and Monitoring Well

<sup>&</sup>lt;sup>4</sup> ENW. March 9, 2012. Subsurface Investigation and Interim Remediation Action Plan, Former Union Cleaners II Property, 1220 S Main Street, Lebanon, Oregon 97355: Prepared for HUI Inc.

*Installation and September 2013 Ground Water Monitoring Report.*<sup>5</sup> This section provides a summary of those discussions; figures and tables following the text may be referenced.

The Lebanon Area-Wide Ground Water Contamination site is generally defined as an area bounded by Mary Street to the north, D street to the south, Hiatt Street to the east, and 10<sup>th</sup> Street to the west. The Union Cleaners II facility and several other facilities are within the Lebanon area-wide site boundaries. Ground-water impacts have affected the beneficial use of domestic water wells. ODEQ has taken actions to investigate and cleanup the ground water contamination since the early 1990s.

In May 1996, initial investigations conducted as part of the Lebanon Area-Wide Ground Water Contamination study had detected PCE, TCE (trichloroethene) and VC (vinyl chloride) in ground water near the southwest corner of the former Union Cleaners II facility. In July 2008, results from an Expanded Site Investigation detected PCE, TCE and associated breakdown products in shallow soil samples collected beneath the former dry cleaner building and in ground water samples beneath, and adjacent to the building. In addition, one soil gas sample collected from a suspected source area beneath the building contained elevated PCE, TCE, cis-1,2-DCE (cis-1,2-dichloroethene) and VC.

Hart-Crowser monitored Lebanon-wide ground water in June 2009, which included one of their clustered monitoring wells in W Elmore Street northwest and down-gradient of the subject property. While PCE was absent in shallow ground water, it was detected at 1.9 micrograms per Liter ( $\mu$ g/L) in the single well cluster completed in the deeper aquifer zone.

Following the site's entry into ODEQ's Voluntary Cleanup Program in August 2010, several phases of investigation were initiated in January 2012, including additional soil and reconnaissance ground water sampling. In September 2013, ENW installed six ground water monitoring well clusters in the shallow water-bearing zone (EMW1-S through EMW6-S), the intermediate water bearing zone (EMW1-I through EMW6-I), and the deep water-bearing zone (EMW1-D through EMW6-D) to further characterize VOC impacts beneath the site. Water level measurements indicated a gradient of the shallow (west to northwest flow direction), intermediate (north-northwest flow direction) and deep (north to northeast flow direction) water-bearing units. Ground water samples from monitoring wells collected between September 2013 through June 2014 suggested occurrences of dissolved chlorinated VOCs in the shallow water-bearing zone at EMW1-S and EMW3-S, intermediate water-bearing zone at EMW5-S and EMW6-S, and deep water-bearing zone at EMW2-D, EMW4-D and EMW6-D; however, only the intermediate aquifer at EMW6 contained PCE, TCE, and VC, above their respective screening level risk-based concentrations (SLRBCs). EMW6 is located just outside the storefront at the north end of the on-site commercial building.

Given the presence of constituents of concern (COCs) in all three water-bearing zones, the ODEQ identified expanded assessment of soil vapors and mitigation of risk of intrusion into indoor air as the highest priority for this site. In response, ENW implemented engineering controls as an Interim Remedial Action Measure (IRAM), including installation and operation of a sub-slab depressurization (SSD) system. The SSD consists of vapor extraction lines installed beneath the existing building connected to an inline mitigation fan and appurtenant fittings, valves, and control systems. The SSD system started operating on March 4, 2013. Periodic testing has confirmed VOC extraction and appropriate pressure differential between the sub-surface and the ambient interior.

<sup>&</sup>lt;sup>5</sup> ENW, October 24, 2013. *Monitoring Well Installation and September 2013 Ground-Water Monitoring Report,* Former Union Cleaners II Site, 1220 S Main Street, Lebanon, Oregon 97355: Prepared for HUI Inc.

From February through October 2016, shallow soil and ground water were investigated to delineate impacts under the building, east-adjoining sidewalk, and Highway 20, and included installation and sampling of 19 borings (EB01 through EB19).

- PCE and TCE were detected in shallow ground water beneath the sidewalk just east of the former
  Union Cleaners II facility and to the east beneath Highway 20 at concentrations up to 1,280
  micrograms per liter (μg/L) and 1,660 μg/L, respectively, with TCE exceeding the SLRBC. PCE and
  TCE were either below their respective ODEQ SLRBCs or did not exceed their method reporting
  limits in samples from borings located on the east side of Highway 20 (EB17 through EB19),
  thereby delineating the extent of impacts to the east.
- PCE and TCE were also detected in ground water samples from beneath the building slab of the former Union Cleaners II facility and south-adjacent spaces, at concentrations up to 584  $\mu$ g/L (PCE) and up to 235  $\mu$ g/L (TCE), below their respective SLRBCs.
- VC was detected up to  $5.96 \,\mu\text{g/L}$  beneath the onsite building, at  $56 \,\mu\text{g/L}$  beneath the center (turn) lane of Highway 20 east of the site, and  $5.7 \,\mu\text{g/L}$  beneath the sidewalk on the east side of Highway 20, which concentrations were well below its SLRBC.

Given the results of soil and ground water investigations conducted by ENW and others at the subject site, ODEQ requested additional remediation of subsurface impacts to shallow soil and ground water at the subject site. During November 2020, ENW oversaw the injection of a product consortia to enhance *in-situ chemical reduction* (ISCR) of PCE and its degradation products to ethene in shallow ground water on- and offsite. Though the depths and numbers of injection intervals varied slightly at some probes, the design quantity of microbial consortia and nutrients was successfully injected at each of the 36 temporary probes. ENW conducted performance monitoring of the ISCR for the ensuing eight quarters, with the last round of monitoring performed in November 2022. Conclusions from the last round of monitoring indicated conditions are anaerobic and sufficiently reducing for reductive dichlorination of PCE to its daughter products TCE, cis-1,2-DCE and VC.

Based on the findings of ground water monitoring events since initiation of in-situ bioremediation at the site in November 2020, concentrations of PCE in shallow ground water have been reduced to concentrations below laboratory method report limits and its breakdown products have also either been reduced to concentrations below laboratory method report limits or concentration trends show consistent attenuation over time. All concentrations of PCE and its breakdown products in the shallow water-bearing unit are below applicable Remedial Action Objectives (RAOs). Based on this, ENW recommended no further ground water monitoring and completion of a residual risk assessment.

In 2022, an assessment<sup>6</sup> of the SSD system was performed to determine if dry-cleaner related VOCs continued to present an unacceptable health risk to current occupants at the site. SSD exhaust vent samples were collected prior to and after a one-week shut-down period. Two sub-slab vapor samples beneath the building floor in the area in and around the SSD system were also collected. The data suggested that shallow ground water reductive dechlorination appears to have not only reduced PCE, TCE and related constituents in ground water but also in soil gas. An 80% reduction in PCE and 99.99% reduction in TCE were realized beneath the former Union Cleaners II space (SUB03/SUB08) since the last

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<sup>&</sup>lt;sup>6</sup> ENW, December 21, 2022. Post-Remediation Sub-Slab Vapor Confirmation, Former Union Cleaners II Facility, 1220 S Main Street, Lebanon, Oregon. ECSI File No. 1699.

sub-slab vapor sampling event in September 2017 which was prior to ground-water remediation. ENW recommended that the active SSD system be converted to a passive sub-slab ventilation (SSV) system.

# 5.0 Extent of Residual Impacts

The current understanding of the nature and magnitude of release is summarized below.

**Potential Sources and Release Mechanisms:** The former dry-cleaning facility at the subject site closed operations in 1986, indicating that any releases associated with their operations are at least 33 years old. The constituents of interest associated with dry cleaning facilities are chlorinated solvents which are categorized as dense non-aqueous phase liquids (DNAPL) for fate and transport purposes. DNAPLs tend to sink in the subsurface under the influence of gravity and continue to release dissolved contaminants to surrounding media for an extended period.

**Impacted Soils:** Consistent with shallow ground water monitoring results, residual soil impacts have been identified under the former Union Cleaners II facility and south-adjacent spaces.

Soil impacts attenuate laterally in all directions from the former Union Cleaners II facility. DNAPL has not been identified in any previous investigation borings. The lateral extent of detectable shallow soil impacts occurs within an area delineated by EB01 through EB04 to the south, EB06 to the west, SS01, SS02, SS04, SS06, EB08 and EB09 to the north, and EB10 and EB12 through EB19 to the east (see Figure 3). Not, only impacts to soil above the apparently soil/water interface were used in this determination.

Shallow Aquifer: Hydraulic gradient within the shallow aquifer onsite is to the west and northwest, based on ENW's quarterly ground water monitoring activities of onsite monitoring wells completed in the shallow aquifer. Ground water monitoring and sampling data suggests impacts were limited to three monitoring wells completed in the shallow aquifer, specifically EMW1-S, EMW3-S and EMW07-S, with the greatest concentrations located in EMW07-S located east of the subject building. Reconnaissance ground water data suggests the presence of dissolved PCE and degradation products in shallow ground water extending east of the subject building beneath the Highway 20 right of way (ROW, see Figure 4).

Intermediate-Depth Aquifer: The local hydraulic gradient of the intermediate-depth aquifer is to the north and northwest based on quarterly potentiometric data collected from six on-site monitoring wells. Quarterly ground water monitoring well sampling has shown impacts to the intermediate-depth aquifer only in monitoring wells on the northern property boundary (EMW5-I, EMW6-I and ODEQ's area-wide monitoring well MW-7D located in the W Elmore ROW just north of the site). EMW6-I had the highest concentrations of PCE (66.8  $\mu$ g/L), TCE (43.3  $\mu$ g/L) and vinyl chloride (2.27  $\mu$ g/L). These concentrations are below applicable RBCs.

**Deep Aquifer:** The local hydraulic gradient of the deep aquifer has been to the north and northeast based on quarterly ground water monitoring data from six wells. Quarterly monitoring events conducted following implementation of shallow ground water remediation reported no impacts to the deeper ground water bearing unit, with the possible exception of the ODEQ monitoring well MW7-D. However, based on how this monitoring well was screening, this data was included in the intermediate-depth water bearing unit (above).

**Soil Vapor, Sub-Slab Vapor and Indoor and Outdoor Air:** A sub-slab depressurization system has been in operation since 2013 and has successfully reduced the migration of VOCs from source areas beneath the

building. In 2022, the depressurization system was shut down and samples were collected. Shallow soil vapor samples were collected from directly beneath the concrete floor slab of the onsite building beneath the former Union Cleaners II space, and in adjacent spaces to the north and south of the former dry cleaner facility. Low concentrations of PCE and TCE were detected; however, below screening level risk-based concentrations.

# 6.0 Locality of Facility

The Locality of the Facility (LOF) is defined as any point where a human or an ecological receptor is reasonably likely to come into contact with facility-related hazardous substances. A Preliminary LOF for the Union Cleaners II site was developed in ENW's *Beneficial Ground Water Use Determination*. In consideration of known current extent of impacts, the LOF has been updated as shown on Figure 5 and is described as follows:

- **To the south:** Coincident with EMW01 and just south of the southern property margin in the eastern portion of the subject property.
- To the west: Coincident with EMW01 and EMW02, bounded by EMW04, and just west of ODEQ MW07-D and extending almost across W Elmore Street.
- **To the north:** While the northern extent of the ground-water plume has not been distinctly defined, the estimated boundary based on detections in monitoring wells along the northern portion of the site is just north of W Elmore Street.
- **To the east:** Bounded by EMW08 in the southern portion of the site and the middle of S Main Street in the northern portion of the site.

# 7.0 Risk Mitigation Measures

Based on the results of previous site investigation and assessment of risk, mitigation measures including both engineering controls and institutional controls were part of the site redevelopment efforts, as outlined below.

## 7.1 Institutional and Engineering Controls

A passive sub-slab ventilation system is present on site that vents sub-slab soil gas out through the roof of the building on site. The following institutional controls are also required at the site:

• Management of impacted media will be performed under a Contaminated Media Management Plan (CMMP)<sup>8</sup> developed for the project.

<sup>&</sup>lt;sup>7</sup> ENW, January 22, 2014. Beneficial Ground Water Use Determination, Former Union Cleaners II Site, 1220 S Main Street, Lebanon, Oregon ECSI File No. 1699.

<sup>&</sup>lt;sup>8</sup> ENW, June 8, 2020. Contaminated Media Management Plan, Former Union Cleaners II Facility, 1220 S Main Street, Lebanon, Oregon.

- Procedures to ensure that all responsible persons that need to know about the restrictions are informed and trained in known practices to ensure that all subsurface work is done in accordance with the management plan.
- Recording of an easement and equitable servitude (EES) against the subject property. This
  document provides the legal basis of ongoing implementation of these measures.

Additionally, ODEQ has implemented several Interim Remedial Action Measures (IRAMs) to address potential impacts on human health within the City from use (ingestion and domestic use) of impacted ground water with the areawide ground-water study area, including:

- Notifications to the County Water master, area well drillers, and realtors that ground water use in the Lebanon Area Ground water plume was associated with elevated health risks.
- ODEQ offers alternate water supplies to properties with impacted water wells. The alternate
  water supplies include bottled water at no cost to the residents, but the agency's preferred longterm alternate remedy (provided by ODEQ) is connection to the municipal system. Connection to
  the municipal water system is offered at no cost to contaminated well owners. In some cases,
  ODEQ would be willing to install a water treatment system (source: ECSI database).
- ODEQ will perform Water Resources Department water well database searches, screen water well start cards, and conduct public outreach to inform the public about the potential health risks;
- Free monitoring of private water wells by ODEQ, performed by the agency's consultant contractor;
- Institutional controls will be implemented for properties whose owners refuse to abandon their impacted wells. The controls may include issuing Notices of Environmental Contamination with the deed at the County courthouse), and completing formal agreements between the City, ODEQ, and the property owner.

# 8.0 Cleanup Levels and Other Numeric Criteria

#### 8.1 Cleanup Standards

#### 8.1.1 Risk-Based Cleanup

ODEQ allows site closure using a risk-based approach. Risk-based concentrations (RBCs) are derived in accordance with ODEQ's Risk-Based Decision-Making (RBDM) guidance document. This document provides guidance on the remediation of hazardous substance cleanups as well as petroleum-contaminated sites.

RBCs are based on Oregon unacceptable additional risk criteria for cancer occurrence and for non-carcinogenic health impacts. The State of Oregon considers acceptable additional risk of cancer from contact with carcinogenic constituents at less than one in one million incidences, or, for non-carcinogenic constituents, below the constituent threshold concentration at which health impacts would occur.

An assessment of risk was previously conducted for the subject property, prior to additional mitigation activities, which identified applicable pathways for human receptors, which have been further modified based on mitigation measures implemented at the subject site. A conceptual site model has been developed for the site, depicting all exposure pathways evaluated and retained for this evaluation of human health residual risk. The conceptual site model is presented in Figure 6. Previously identified preliminary COCs will be further evaluated through a residual risk-based assessment, evaluating site-specific exposure pathways and receptors against ODEQ-provided RBCs.

#### **8.1.2** EPA Vapor Intrusion Screening Levels

ODEQ adopted and implemented U.S. Environmental Protection Agency's (EPA's) vapor intrusion screening levels (VISLs) screening attenuation factors and values in June 2023. EPA VISLs for residential and commercial receptors were utilized for screening soil gas and sub-slab vapor. Soil gas/sub-slab vapor will also be screened against EPA Vapor Intrusion Screening Levels (VISLs).

#### 9.0 Residual Risk Assessment

Where residual impacts exist in media above SLRBCs, the State of Oregon requires that the impacts are evaluated using a risk-based approach, as described in ODEQ's RBDM guidance document, 2011 revision. The RBDM guidance document and its supplemental updates periodically provided by the agency provide pre-calculated RBCs which were developed as screening levels for suspect sites, based on Oregon's unacceptable additional risk criteria for cancer occurrence and for non-carcinogenic health impacts. The State of Oregon considers acceptable additional risk of cancer from contact with carcinogenic constituents at one in one million or less incidences, or for non-carcinogenic constituents, a hazard quotient of one or less.

This section conducts a residual risk-based assessment for residual impacted media at the site, based on analytical data collected during the site activities described above.

#### 9.1 Identification of Constituents of Concern

TCE was identified as a constituent of concern in the previous risk assessment prepared for the site and is retained in this residual risk assessment as a preliminary constituent of concern (COC). Additionally, PCE was retained as a Constituents of Possible Concern (COPC) as the parent solvent from with TCE was likely derived and 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride were retained as COPCs due to their potential to be generated during the chosen remedial action.

#### 9.2 Conceptual Site Model

A conceptual site model was prepared for the previous risk assessment. However, as the LOF has changed significantly, an updated CSM has been prepared for the residual risk assessment. The updated conceptual site model is presented in Figure 6; behind Figures tab following text.

<sup>&</sup>lt;sup>9</sup> ENW, January 29, 2015. Risk Assessment, Former Union Cleaners II Site, 1220 S Main Street, Lebanon, Oregon 97355, ECSI File #1699.

#### 9.2.1 Media of Concern

Preliminary COCs were identified in surface soils (i.e., <3 feet depth), subsurface soils (>3 feet depth), shallow, intermediate-depth, and deep ground water aquifers, and soil gas/sub-slab vapor. There are no surface waters likely to be impacted in the vicinity of the site.

#### 9.2.2 Ground Water Use Assessment

Based on the findings of a previously prepared Beneficial Water User Determination,<sup>7</sup> the ground water ingestion-inhalation pathway is considered incomplete both currently and into the foreseeable future at the subject property.

#### 9.2.3 Pathways of Concern

An exposure pathway is the course a constituent takes from a source to an exposed population. Exposure pathways include four elements:

- 1. the source of contamination;
- 2. the means by which a constituent will be released, retained, or travel in a given medium (e.g., air or ground water);
- 3. a point of potential contact with a receptor; and
- 4. the means by which contact will occur (e.g., inhalation, ingestion).

If any of these elements are missing, the pathway is considered incomplete. Tables 9-1 through 9-3 present a summary of the pathway analysis for human receptors.

Table 9-1. Summary of Pathway Analysis for Human Receptors: Soil

Potentially Exposure Route, Medium and Pathway Reason for Selection or Exposure Route and Pathway Route Rout												
Potentially Exposed Population	Exposure Route, Medium and Exposure Point	Pathway Considered	Reason for Selection or Exclusion									
	Surface Soi	l (<3 feet bgs)										
	Soil ingestion, dermal contact, and Inhalation	Yes	The site is paved, however breaks in the pavement may allow access to surface soils beneath.									
Future Urban Resident	Inhalation of volatiles (outdoor air)	YES	Preliminary COCs are volatile and suggest a vapor inhalation risk may be present. Therefore, this pathway was further evaluated using sub-slab vapor data.									
/ Current and Future Occupational Worker	Inhalation of volatiles from impacted soil intruding into building (indoor air)	YES	Preliminary COCs are volatile and suggest a vapor inhalation risk may be present. Therefore, this pathway was further evaluated using sub-slab vapor data.									
	Leaching to ground water, followed by direct ingestion	No	Leaching to ground water has occurred; however no current beneficial use onsite. Off-site contamination handled under ODEQ's Area-wide project.									
Current/Future Construction and Excavation Workers	Soil ingestion, dermal contact, and inhalation	Yes	Soil impacts are present in shallow soil.									
	Subsurface S	oil (>3 feet bgs)										
	Soil ingestion, dermal contact, and Inhalation	No	Soil impacts to subsurface soils at depth greater than what a resident or occupant would likely encounter.									
Future Urban Resident / Current and Future	Inhalation of volatiles (outdoor air)	YES	Preliminary COCs are volatile and suggest a vapor inhalation risk may be present. Therefore, this pathway was further evaluated using sub-slab vapor data.									
Occupational Worker	Inhalation of volatiles from impacted soil intruding into building (indoor air)	YES	Preliminary COCs are volatile and suggest a vapor inhalation risk may be present. Therefore, this pathway was further evaluated using sub-slab vapor data.									
	Leaching to ground water, followed by direct ingestion	No	There is not likely current or future beneficial use of ground water within the LOF									
Current/Future Construction Worker	Soil ingestion, dermal contact, and inhalation	YES	Construction workers may encounter impacted soils under the subject building during future construction work.									
Current/Future Excavation Worker	Soil ingestion, dermal contact, and inhalation	YES	Excavation workers may encounter impacted soils at depth during utility work or excavation.									

Table 9-2. Summary of Pathway Analysis for Human Receptors: Ground Water

Potentially Exposed Population	Exposure Route, Medium and Exposure Point	Pathway Considered	Reason for Selection or Exclusion
	Shallow Grou	und Water	
Future Urban Resident	Ingestion and Inhalation from Tapwater	No	Shallow ground water is not currently or likely to be used in the future for drinking water (no beneficial use onsite), and urban residents are unlikely to have contact with ground water. ODEQ IRAMs will prevent new ground water usage.
/ Current and Future Occupational Worker	Volatilization to Outdoor Air	YES	Preliminary COCs are volatile and suggest a vapor inhalation risk may be present. Therefore, this pathway was further evaluated using sub-slab vapor data.
	Vapor Intrusion into Buildings	YES	Preliminary COCs are volatile and suggest a vapor inhalation risk may be present. Therefore, this pathway was further evaluated using sub-slab vapor data.
Current/Future Construction and Excavation Workers	GW in an excavation	Yes	Soil impacts are present in shallow soil.
	Intermediate and De	ep Ground Wate	er
Future Urban Resident	Ingestion and Inhalation from Tapwater	No	Shallow ground water is not used for drinking water (no wells in LOF), and urban residents are unlikely to have contact with ground water. ODEQ IRAMs will prevent new ground water usage.
Occupational Worker	Volatilization to Outdoor Air	No	Preliminary COCs are volatile; however, GW data is not being used to evaluate vapor risk.
	Vapor Intrusion into Buildings	No	Preliminary COCs are volatile; however, GW data is not being used to evaluate vapor risk.
Current/Future Construction and Excavation Workers	GW in an excavation	No	Construction/excavation workers are unlikely to come into contact with intermediate and deep ground water.

Table 9-3. Summary of Pathway Analysis for Human Receptors: Soil Vapor/Soil Gas

Potentially Exposed Population	Exposure Route, Medium and Exposure Point	Pathway Considered	Reason for Selection or Exclusion								
Soil Vapor/Soil Gas											
Future Urban Resident	Vapor Intrusion into Buildings	Yes	Sub-slab vapor is impacted with hazardous volatile constituents								
Current/Future Occupational Worker	Vapor Intrusion into Buildings	Yes	Sub-slab vapor is impacted with hazardous volatile constituents								

# 9.3 Further Evaluation of Constituents of Potential Concern and Constituents of Concern under Residual Conditions

#### 9.3.1 Residual Surface Soil (0-3-Feet)

Since 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, TCE, PCE, and vinyl chloride were identified as COPCs or COCs in surface soil prior to the implementation of treatment measures, they were further evaluated by comparing the lowest applicable RBCs for complete exposure pathways for applicable receptors to determine if they are constituents of concern (COCs) at the site under residual conditions (Table 1). Based on this further evaluation and in consideration of mitigation measures implemented at the subject site and as part of ODEQ's IRAM, no COCs were identified in surface soil. It should be noted that additional soil testing was not performed following treatment of ground water since it was assumed shallow soil would be remediated concurrent with shallow ground water treatment.

#### 9.3.2 Residual Subsurface Soil

Since 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, TCE, PCE, and vinyl chloride were identified as COPCs or COCs in subsurface soil prior to the implementation of treatment measures, they were further evaluated by comparing RBCs for complete exposure pathways for applicable receptors to determine if they are COCs at the site (Table 2). Based on this further evaluation and in consideration of mitigation measures implemented at the subject site and as part of ODEQ's IRAM, no COCs were identified in subsurface soil. It should be noted that additional soil testing was not performed following treatment of ground water since it was assumed shallow soil would be remediated concurrent with shallow ground water treatment.

#### 9.3.3 Ground Water

Since 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, TCE, PCE, and vinyl chloride were identified as COPCs or COCs in ground water prior to the implementation of treatment measures, they were further evaluated by comparing RBCs for complete exposure pathways for applicable receptors to determine if they are COCs at the site (Table 3). Based on this further evaluation and in consideration of mitigation measures implemented at the subject site and as part of ODEQ's IRAM, no COCs were identified in ground water.

#### 9.3.4 Soil Gas/Sub-slab Vapor

Since 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, TCE, PCE, and vinyl chloride were identified by the initial screening as COPCs or COCs in soil gas/sub-slab vapor prior to the implementation of treatment measures, they were further evaluated by comparing RBCs for complete exposure pathways for applicable receptors (both applicable ODEQ RBCs and EPA VISLs) to determine if they are COCs at the site (Table 4). Based on this further evaluation and in consideration of mitigation measures implemented at the subject site and as part of ODEQ's IRAM, no COCs were identified in ground water. It should be noted that 1,1-dichloroethene and trans-1,2-dichloroethene were not tested for in the confirmation testing round of sub-slab vapor sampling since these constituents were not detected in previous assessments (and therefore were not considered COPCs in sub-slab vapor).

#### 9.3.5 Scoping Level Ecological Risk Assessment

As documented in the initial risk assessment, 9 ecological risks are unlikely.

#### 9.3.6 Hot Spot

As there are no COCs identified during the residual risk assessment, no hot spots are expected to be present.

#### 9.3.7 Uncertainty Analysis

An uncertainty analysis is a discussion of uncertainties in the risk estimates and their impacts in terms of underestimating or overestimating calculated potential risks. There are inherent uncertainties in the risk characterization process. These uncertainties are associated with:

- The validity of adding risks or hazard quotients for multiple chemicals.
- The validity of adding risks or hazard quotients across pathways.
- Lack of reliable toxicological data.

- The validity of the critical underlying assumption in the dose-response model for carcinogens (linearized multistage model) that there is no threshold for carcinogenesis.
- The probability of adverse effects in a human population that is highly variable genetically and in age, activity level and lifestyle.

**Uncertainty Based on Data Gaps**. A sampling program was developed to target areas of likely impact, based on historical site uses. Therefore, samples were not collected from all areas of the subject site. Specifically, no additional soil samples were collected following implementation of the remediation action program. However, since justified sampling program targeted areas where impacts were likely present, the statistical distribution of detected constituents would be biased high, if detected. Additionally, given the volatility of the COPCs and COCs and propensity of soil data to underestimate extent of soil impacts for these constituents, ground water data combined with sub-slab vapor data was used as surrogates to estimate that residual soil concentrations are likely much lower that concentrations prior to the implementation of the remediation program. It is not practical to sample all areas of the site, given the inaccessibility of many of these areas due to the present of site structures. Therefore, the uncertainty in contaminant distribution would not likely change the findings of this assessment.

#### 10.0 Recommendations

The information presented in this report demonstrates that residual risk to surface soil, subsurface soil and ground water from a release from historical onsite drycleaning operations are no longer present on site based on an assessment of current and future exposure pathways at the property.

Based on these results, ENW recommends the following:

- Although residual risk is no longer present on site, impacted soil above Clean Fill Screening
  Levels and impacted ground water remain on site. ENW recommends updating the CMMP to
  ensure mitigation of residual impacts at the site.
- No future use of the underlying ground water was domestic purposes is allowed, as outline in ODEQ's IRAMs for the City of Lebanon.

This report has been submitted to ODEQ as part of ongoing requirements. Additional work will be submitted as available. The property owner is required to keep a copy of this report for a minimum of ten (10) years; however, we recommend this report is kept as part of the permanent property records.

#### 11.0 Limitations

The scope of this report is limited to observations made during on-site work; interviews with knowledgeable sources; and review of readily available published and unpublished reports and literature. As a result, these conclusions are based on information supplied by others as well as interpretations by qualified parties.

The focus of the work does not extend to the presence of the following conditions:

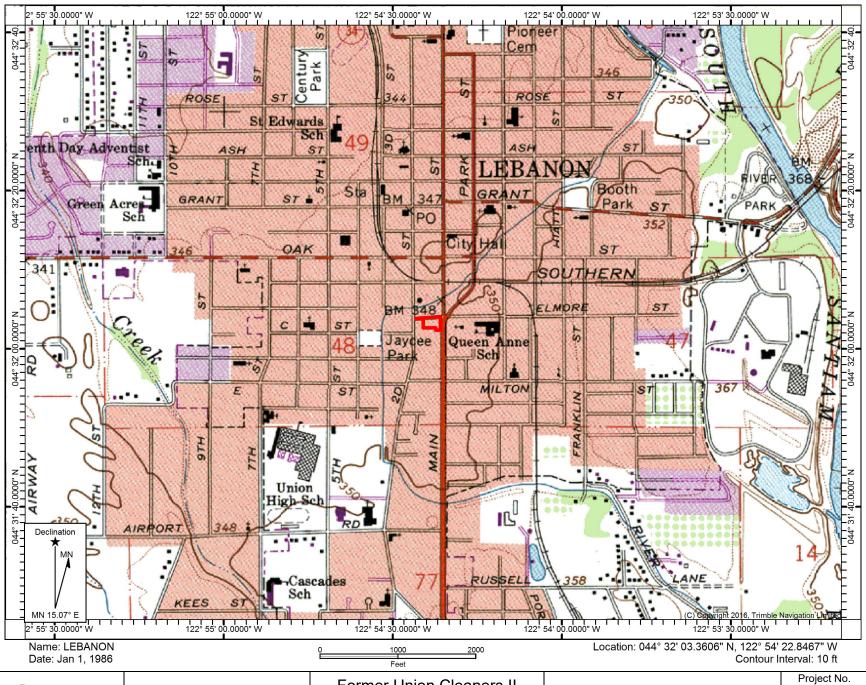
Naturally occurring toxic or hazardous substances in the subsurface soils, geology and water,

- 2. Toxicity of substances common in current habitable environments, such as stored chemicals, products, building materials and consumables,
- 3. Contaminants or contaminant concentrations that are not a concern now but may be under future regulatory standards,
- 4. Unpredictable events that may occur after Creekside/ENW's site work, such as illegal dumping or accidental spillage.

There is no practice that is thorough enough to absolutely identify the presence of all hazardous substances that may be present at a given site. Creekside/ENW's investigation has been focused only on the potential for contamination that was specifically identified in the Scope of Work. Therefore, if contamination other than that specifically mentioned is present and not identified as part of a limited Scope of Work, Creekside/ENW's environmental investigation shall not be construed as a guaranteed absence of such materials. Creekside/ENW has endeavored to collect representative analytical samples for the locations and depths indicated in this report. However, no sampling program can thoroughly identify all variations in contaminant distribution.

We have performed our services for this project in accordance with our agreement and understanding with the Client. This document and the information contained herein have been prepared solely for the use of the client.

Creekside/ENW performed this study under a limited scope of services per our agreement. Creekside/ENW assumes no responsibility for conditions that we did not specifically evaluate or conditions that were not generally recognized as environmentally unacceptable at the time this report was prepared.



**DEVRENNOR THWEST** 

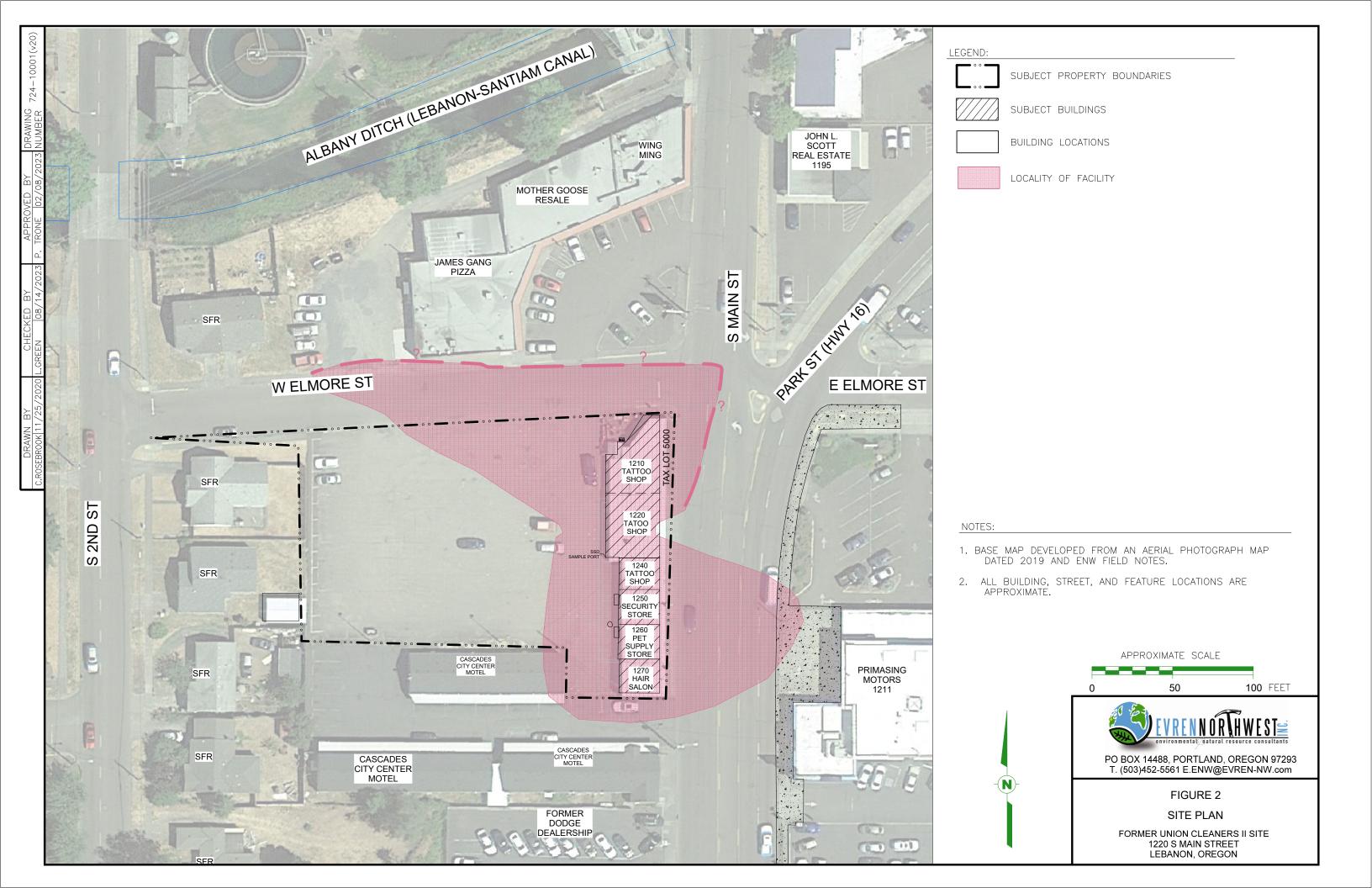
Date Drawn: 10/28/2020 CAD File Name: 724-10001-fig1sv\_map(v02) Drawn By: JOB Approved By: LDG

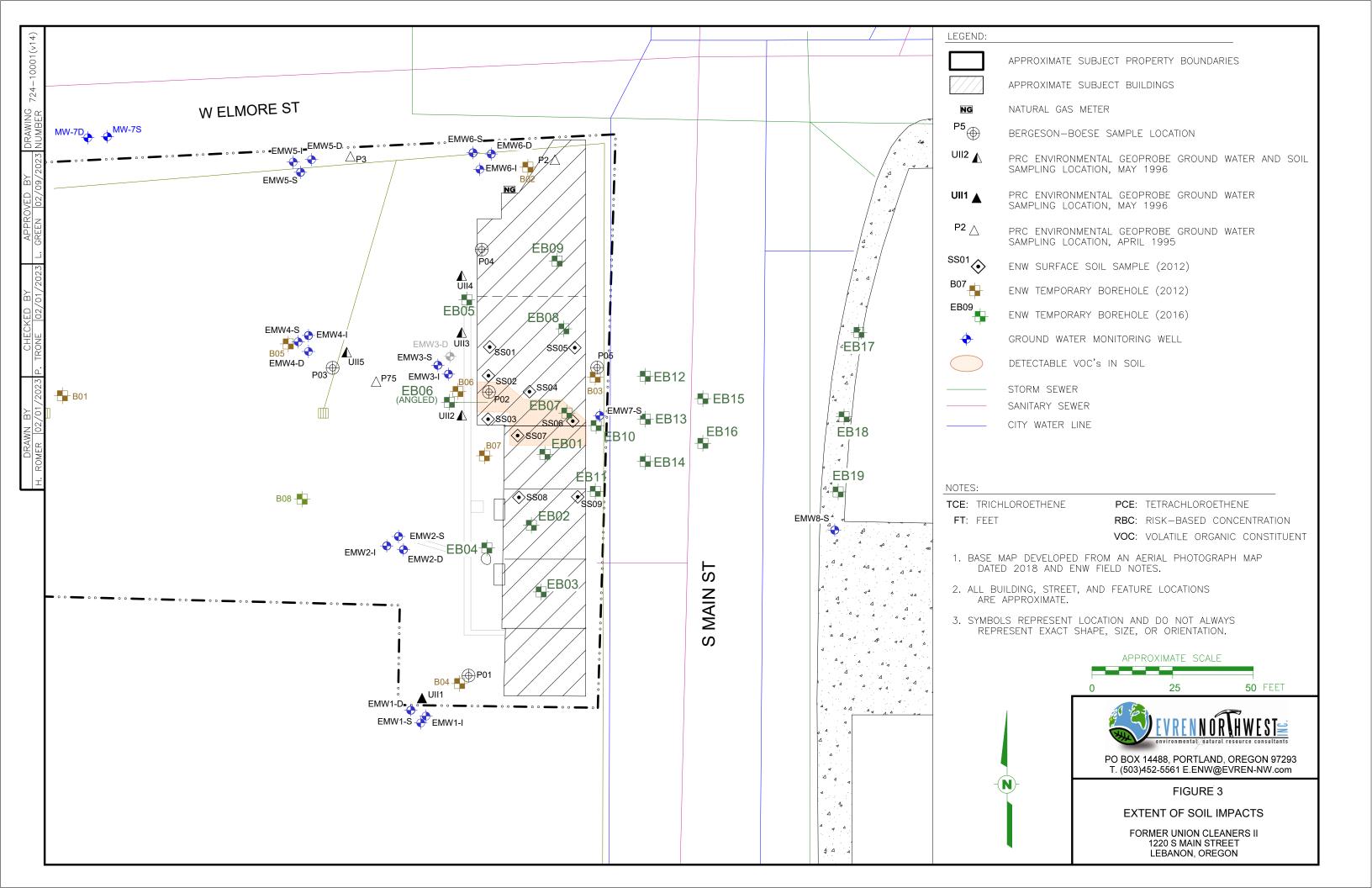
Former Union Cleaners II 1220 Main Street Lebanon, Oregon

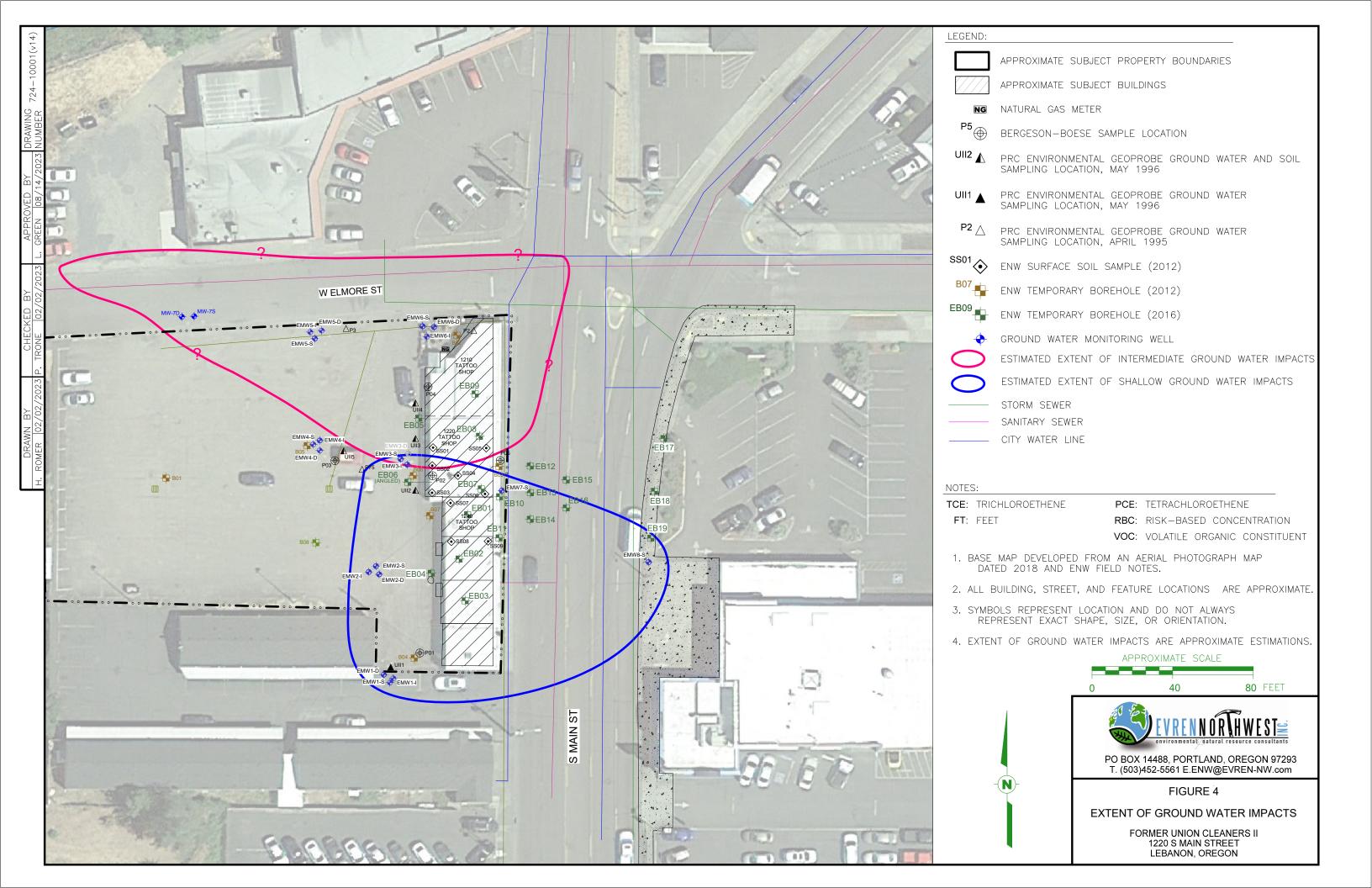
**Site Vicinity Map** 

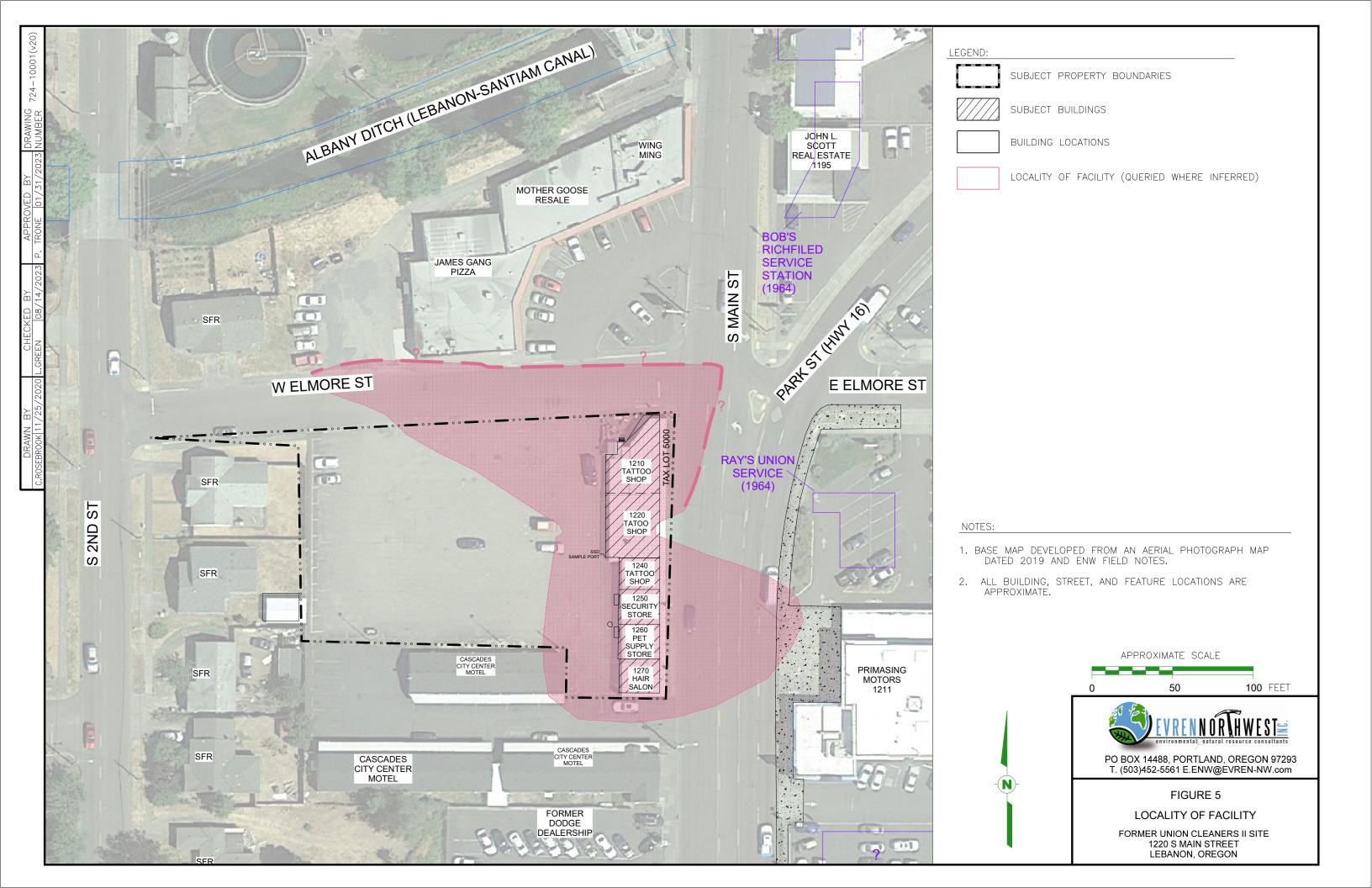
724-10001

Figure No.









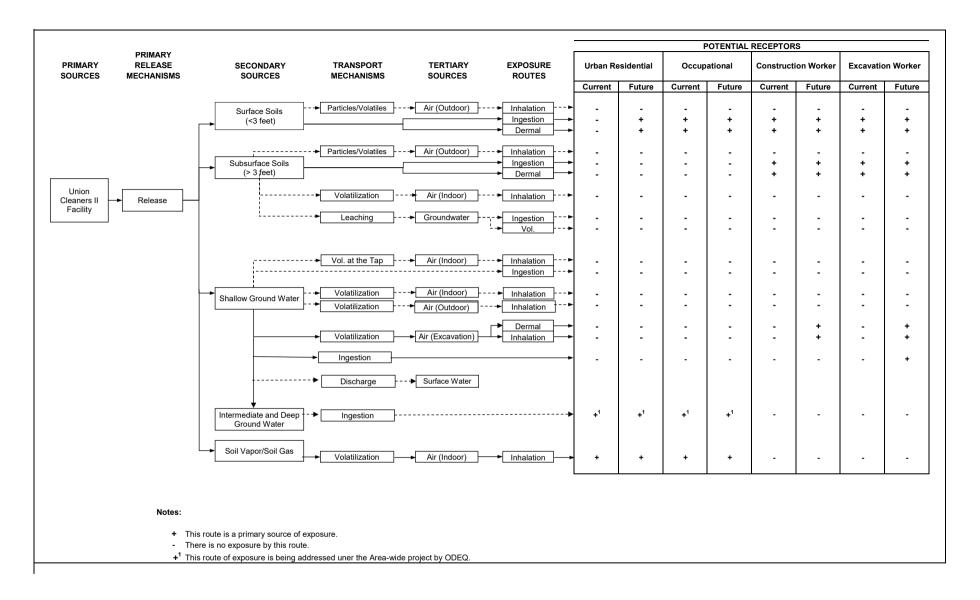


Table 1. Summary of Analytical Data, Surface Soil

Sam	nple ID	UII5-GB-2	P02-1			
Date Sa	ampled	5/15/1996	7/28/2008		Lowest Applicable	Exceeds ODEQ's applicable RBC
Depth Sampled	d (feet)	2	1	Maximum Soil	Lowest Applicable ODEQ RBC <sup>1</sup> (Soil	(Soil)
Samp	oled By	PRC	BB&A	Concentration	Ingestion, Dermal	
Lo	ocation	Between parking lot catch basin and pavement patch	West central storefront immediately north of 1240 S Main Street	(all soil)	Contact, and Inhalation - Urban Residential)	TRUE OR Y FALSE OR N
Constituent of Interest	Note	mg/kg (ppm)	mg/kg (ppm)	mg/k	kg (ppm)	
Volatile Organic Constituents						
Dichloroethene, 1,1-	nc, v		<0.116 (ND)	<0.116 (ND)	3500	N
Dichloroethene, cis-1,2-	nc, v	0.047	<0.116 (ND)	0.047	310	N
Dichloroethene, trans-1,2-	nc, v	0.00057	<0.116 (ND)	0.00057	3100	N
Tetrachloroethene (PCE)	C, V	<0.0005 (ND)	0.205	0.205	540	N
Trichloroethene	C, V	<0.0005 (ND)	<0.116 (ND)	<0.116 (ND)	17	N
Vinyl chloride	C, V	0.0011	<0.116 (ND)	0.0011	0.8	N

#### Notes:

mg/Kg = milligram per kilogram or parts per million (ppm).

<# (ND) = not detected at or above the laboratory method reporting limit shown.</p>

NE = not established.

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

PRC = PRC Environmental Management, Inc.

<sup>&</sup>lt;sup>1</sup> risk-based concentration

Table 2. Summary of Analytical Data, Subsurface Soil

Sam	nple ID	UII2-GB-6	UII3-GB-6	UII4-GB-6	P01-4	P03-4	P04-4	P05-5	B01-SWI-7.5	B02-SWI-6	B03-SWI-7.5	B04-SWI-5
Date Sa	mpled	5/15/1996	5/15/1996	5/15/1996	7/28/2008	7/28/2008	7/28/2008	7/28/2008	1/11/2012	1/11/2012	1/10/2012	1/11/2012
Depth Sampled	d (feet)	6	6	6	4	4	4	5	7.5	6	7.5	5
Sampled E		PRC	PRC	PRC	BB&A	BB&A	BB&A	BB&A	ENW	ENW	ENW	ENW
Locatio		Outside northwest corner of 1240 S Main Street	Outside northwest corner of storefront immediately north of 1240 S Main Street	Near northwest corner of retail strip.	Upgradient location, south end of parking lot	Between parking lot catch basin and pavement patch	Northwest corner of retail strip containing 1240 S Main Street	Immediately east of 1240 S Main Street, in sidewalk	Westernmost portion of parking lot, near catch basin.	North end of retail strip containing 1240 S Main Street	Immediately east of 1240 S Main Street, in sidewalk	Upgradient location, south end of parking lot
Constituent of Interest	Note	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
Volatile Organic Constituents												
Dichloroethene, 1,1-	nc, v				<0.147 (ND)	<0.133 (ND)	<0.14 (ND)	<0.148 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Dichloroethene, cis-1,2-	nc, v	<0.0005 (ND)	<0.0005 (ND)	<0.0005 (ND)	<0.147 (ND)	<0.133 (ND)	<0.14 (ND)	<0.148 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Dichloroethene, trans-1,2-	nc, v	<0.0005 (ND)	<0.0005 (ND)	<0.0005 (ND)	<0.147 (ND)	<0.133 (ND)	<0.14 (ND)	<0.148 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Tetrachloroethene (PCE)	C, V	<0.0005 (ND)	<0.0005 (ND)	<0.0005 (ND)	<0.147 (ND)	<0.133 (ND)	<0.14 (ND)	<0.148 (ND)	<0.025 (ND)	<0.025 (ND)	<0.025 (ND)	<0.025 (ND)
Trichloroethene	C, V	<0.0005 (ND)	<0.0005 (ND)	<0.0005 (ND)	<0.147 (ND)	<0.133 (ND)	<0.14 (ND)	<0.148 (ND)	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)
Vinyl chloride	C, V	<0.001 (ND)	<0.001 (ND)	<0.001 (ND)	<0.147 (ND)	<0.133 (ND)	<0.14 (ND)	<0.148 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)

Notes:

mg/Kg = milligram per kilogram or parts per million

(ppm).
<# (ND) = not detected at or above the laboratory method

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c = carcinogenic

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v = volatile

nv = nonvolatile

DRO = diesel-range organics.

RRO = residual-range organics.

PRC = PRC Environmental Management, Inc.

<sup>&</sup>lt;sup>1</sup> Lowest risk-based concentration for soil (screening level)

Table 2. Summary of Analytical Data, Subsurface Soil

Sample	ID B05-SWI-4	B06-SWI-5	B07-5	B08-34	SS02-SWI-5	SS03-5	SS04-5	SS06-3.5	SS06-5	SS06-6	SS06-SWI-6.5
Date Samp	led 1/11/2012	1/11/2012	1/11/2012	8/6/2013	1/10/2012	1/10/2012	1/10/2012	1/10/2012	1/10/2012	1/10/2012	1/10/2012
Depth Sampled (f	et) 4	5	5	34	5	5	5	3.5	5	6	6.5
Sampled	By ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Loca	Northwest of parkir on lot catch basin, ne magnetic anomal	immediately north of	Adjacent to central west side of 1240 S Main Street	Reconnaissance boring B08, south central portion of parking lot	West central storefront immediately north of 1240 S Main Street	Southwest corner of storefront immediately north of 1240 S Main Street	Center of storefront immediately north of 1240 S Main Street	Southeast corner of storefront immediately north of 1240 S Main Street	Southeast corner of storefront immediately north of 1240 S Main Street	Southeast corner of storefront immediately north of 1240 S Main Street	Southeast corner of storefront immediately north of 1240 S Main Street
Constituent of Interest No	e mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
Volatile Organic Constituents											
Dichloroethene, 1,1-	v <0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.0286 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Dichloroethene, cis-1,2-	v <0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.0286 (ND)	<0.05 (ND)	0.12	<0.05 (ND)	0.26	0.50	1.0	0.95
Dichloroethene, trans-1,2-	v <0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.0286 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Tetrachloroethene (PCE) c,	<0.025 (ND)	<0.025 (ND)	<0.025 (ND)	<0.0286 (ND)	0.29	0.093	1.1	0.3	1.1	6.4	6.2
Trichloroethene c,	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	<0.0286 (ND)	0.056	0.038	0.039	0.76	1.5	3.3	3.9
Vinyl chloride c,	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.0286 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)

Notes

mg/Kg = milligram per kilogram or parts per million

(ppm)

<# (ND) = not detected at or above the laboratory method</p>

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RRO = residual-range organics.

PRC = PRC Environmental Management, Inc.

<sup>&</sup>lt;sup>1</sup> Lowest risk-based concentration for soil (screening level)

Table 2. Summary of Analytical Data, Subsurface Soil

Sample	ID SS07-3.5	SS07-SWI-5	SS08-SWI-3.5	SS09-SWI-4	Comp01-130806	EMW3-I-43	EMW4-D/27'	EMW4-D/39'	EMW4-D/51'	EMW5-I/60'	EMW6-D/48'
Date Samp	ed 1/24/2012	1/24/2012	1/24/2012	1/24/2012	8/6/2013	8/5/2013	7/24/2013	7/25/2013	7/25/2013	7/22/2013	7/23/2013
Depth Sampled (fe	et) 3.5	5	3.5	4	N/A	43	27	39	51	60	48
Sampled	By ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Locati	on Center of 1240 S Main Street	Center of 1240 S Main Street	Southeast corner of 1240 S Main Street	Southwest corner of 1240 S Main Street	Southwest of the La Estrellita Market (former Union Cleaners II)	Immediately west of the La Estrellita Market (former Union Cleaners II)	Central parking lot where shallow impacts are known to be high concentration	Central parking lot where shallow impacts are known to be high concentration	Central parking lot where shallow impacts are known to be high concentration	North-central part of the site	Northeast corner of the site
Constituent of Interest Not	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
Volatile Organic Constituents											
Dichloroethene, 1,1-	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.0391 (ND)	<0.0262 (ND)	<0.0311 (ND)	<0.0288 (ND)	<0.0306 (ND)	<0.0392 (ND)	<0.0268 (ND)
Dichloroethene, cis-1,2-	<0.05 (ND)	0.065	<0.05 (ND)	<0.05 (ND)	<0.0391 (ND)	<0.0262 (ND)	<0.0311 (ND)	<0.0288 (ND)	<0.0306 (ND)	<0.0392 (ND)	<0.0268 (ND)
Dichloroethene, trans-1,2-	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.0391 (ND)	<0.0262 (ND)	<0.0311 (ND)	<0.0288 (ND)	<0.0306 (ND)	<0.0392 (ND)	<0.0268 (ND)
Tetrachloroethene (PCE) c, v	1.6	0.091	0.038	0.11	<0.0391 (ND)	<0.0262 (ND)	<0.0311 (ND)	<0.0288 (ND)	<0.0306 (ND)	<0.0392 (ND)	<0.0268 (ND)
Trichloroethene c, v	0.074	0.091	<0.03 (ND)	<0.03 (ND)	<0.0391 (ND)	<0.0262 (ND)	<0.0311 (ND)	<0.0288 (ND)	<0.0306 (ND)	<0.0392 (ND)	<0.0268 (ND)
Vinyl chloride c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.0391 (ND)	<0.0262 (ND)	<0.0311 (ND)	<0.0288 (ND)	<0.0306 (ND)	<0.0392 (ND)	<0.0268 (ND)

Notes

mg/Kg = milligram per kilogram or parts per million

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<sup>&</sup>lt;sup>1</sup> Lowest risk-based concentration for soil (screening level)

Table 2. Summary of Analytical Data, Subsurface Soil

Sample I	D EMW6-D/63'	EMW6-D/79'	EMW6-I/43'	EB01/8.5	EB02/7.5	EB03/5-6	EB04/6-7	EB05/4-5	EB06/8	EB07/5-6	EB08/7-8
Date Sample	d 7/23/2013	7/23/2013	7/24/2013	2/15/2016	2/15/2016	2/15/2016	2/15/2016	2/15/2016	2/16/2016	2/16/2016	2/16/2016
Depth Sampled (fee	t) 63	79	43	8.5	7.5	5-6	6-7	4-5	8	5-6	7-8
Sampled E	y ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Locatio	n Northeast corner of the site	Northeast corner of the site	Northeast corner of the site	Inside beauty salon; collected at soil/ground water interface	Inside vacant shop; collected at soil/ground water interface	Inside used items store (south end of mall); collected at soil/ground water interface	West side, near sewer line at south end; collected at soil/ground water interface	West side, near sewer line at north end; collected at soil/ground water interface	Angled boring from west side, under P- N-K Resale (former grocery); collected at soil/ground water interface	Inside P-N-K Resale at southeast corner	Middle of P-N-K Resale; collected at soil/ground water interface
Constituent of Interest Note	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
Volatile Organic Constituents											
Dichloroethene, 1,1-	<0.0246 (ND)	<0.0321 (ND)	<0.0286 (ND)	<0.0445 (ND)	<0.0396 (ND)	<0.0426 (ND)	<0.0439 (ND)	<0.0386 (ND)	<0.0422 (ND)	<0.0517 (ND)	<0.045 (ND)
Dichloroethene, cis-1,2-	<0.0246 (ND)	<0.0321 (ND)	<0.0286 (ND)	<0.0445 (ND)	<0.0396 (ND)	<0.0426 (ND)	<0.0439 (ND)	<0.0386 (ND)	<0.0422 (ND)	0.644	<0.045 (ND)
Dichloroethene, trans-1,2-	<0.0246 (ND)	<0.0321 (ND)	<0.0286 (ND)	<0.0445 (ND)	<0.0396 (ND)	<0.0426 (ND)	<0.0439 (ND)	<0.0386 (ND)	<0.0422 (ND)	<0.0517 (ND)	<0.045 (ND)
Tetrachloroethene (PCE) c, v	<0.0246 (ND)	<0.0321 (ND)	<0.0286 (ND)	<0.0445 (ND)	<0.0396 (ND)	<0.0426 (ND)	<0.0439 (ND)	<0.0386 (ND)	<0.0422 (ND)	<0.0517 (ND)	<0.045 (ND)
Trichloroethene c, v	<0.0246 (ND)	<0.0321 (ND)	<0.0286 (ND)	<0.0445 (ND)	<0.0396 (ND)	<0.0426 (ND)	<0.0439 (ND)	<0.0386 (ND)	<0.0422 (ND)	<0.0517 (ND)	<0.045 (ND)
Vinyl chloride c, v	<0.0246 (ND)	<0.0321 (ND)	<0.0286 (ND)	<0.0445 (ND)	<0.0396 (ND)	<0.0426 (ND)	<0.0439 (ND)	<0.0386 (ND)	<0.0422 (ND)	<0.0517 (ND)	<0.045 (ND)

Notes

mg/Kg = milligram per kilogram or parts per million

(ppm)

<# (ND) = not detected at or above the laboratory method</p>

reporting limit shown.

NE = not established.

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

DRO = diesel-range organics.

RRO = residual-range organics.

PRC = PRC Environmental Management, Inc.

<sup>&</sup>lt;sup>1</sup> Lowest risk-based concentration for soil (screening level)

Table 2. Summary of Analytical Data, Subsurface Soil

Sampl	e ID EB09/7-8	EB12/9	EB13/9	EB14/9	EB15/9	EB16/5	EB16/9	EB17/5	EB18/5	EB19/5
Date Sam	oled 2/16/2016	7/18/2016	7/18/2016	7/18/2016	7/18/2016	7/18/2016	7/18/2016	10/18/2016	10/18/2016	10/18/2016
Depth Sampled (	eet) 7-8	9	9	9	9	5	9	5	5	5
Sample	l By ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Loca	North end of P-N-Resale; collected soil/ground water interface	at Lane Highway 20 -	West (south-bound) Lane Highway 20 - middle; collected at soil/ground water interface	West (south-bound) Lane Highway 20 - south; collected at soil/ground water interface	Center (turn) Lane Highway 20 - north; collected at soil/ground water interface	Center (turn) Lane Highway 20 - south	Center (turn) Lane Highway 20 - south	Sidewalk, east side of Highway 20 - north; collected at soil/ground water interface	Sidewalk, east side of Highway 20 - middle; collected at soil/ground water interface	Sidewalk, east side of Highway 20 - south; collected at soil/ground water interface
Constituent of Interest No.	te mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
Volatile Organic Constituents										
Dichloroethene, 1,1-	v <0.0482 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Dichloroethene, cis-1,2-	v <0.0482 (ND)	<0.05 (ND)	0.11	<0.05 (ND)	0.12	0.14	0.19	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Dichloroethene, trans-1,2-	v <0.0482 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Tetrachloroethene (PCE)	v <0.0482 (ND)	0.053	<0.025 (ND)	<0.025 (ND)	0.034	<0.025 (ND)	0.17	<0.025 (ND)	<0.025 (ND)	<0.025 (ND)
Trichloroethene c,	v <0.0482 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	0.14	0.029	0.64	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)
Vinyl chloride c,	v <0.0482 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)

Notes:

mg/Kg = milligram per kilogram or parts per million

(ppm). <# (ND) = not detected at or above the laboratory method

reporting limit shown.

NE = not established.

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

DRO = diesel-range organics.

RRO = residual-range organics.

PRC = PRC Environmental Management, Inc.

<sup>&</sup>lt;sup>1</sup> Lowest risk-based concentration for soil (screening level)

Table 2. Summary of Analytical Data, Subsurface Soil

	Sample ID			
	Date Sampled		Lawaat Appliaabla	Exceeds ODEQ's applicable RBC
Depth :	Sampled (feet)	Massinas Cail	Lowest Applicable ODEQ RBC <sup>1</sup> (Soil	(Soil)
	Sampled By	Maximum Soil Concentration	Ingestion, Dermal	
	Location	(all soil)	Contact, and Inhalation - Excavation Worker)	TRUE OR Y FALSE OR N
Constituent of Interest	Note	mg/k		
Volatile Organic Constituents				
Dichloroethene, 1,1-	nc, v	<0.148 (ND)	370000	N
Dichloroethene, cis-1,2-	nc, v	1.0	20000	N
Dichloroethene, trans-1,2-	nc, v	<0.148 (ND)	200000	N
Tetrachloroethene (PCE)	C, V	6.4	50000	N
Trichloroethene	C, V	3.9	3700	N
Vinyl chloride	C, V	<0.148 (ND)	950	N

Notes:

mg/Kg = milligram per kilogram or parts per million

mag).

(ND) = not detected at or above the laboratory method

reporting limit shown.

NE = not established.

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c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

DRO = diesel-range organics.

RRO = residual-range organics.

PRC = PRC Environmental Management, Inc.

<sup>&</sup>lt;sup>1</sup> Lowest risk-based concentration for soil (screening level)

#### Table 3 - Summary of Analytical Data, Monitoring Wells

	Location ID							EMW01	-S					
	Sample ID	EMW01-S	EMW01-S	EMW01-S	EMW01-S	EMW01S								
	Date Sampled	9/10/2013	12/18/2013	3/12/2014	6/17/2014	9/16/2020	2/9/2021	5/18/2021	8/11/2021	11/10/2021	2/3/2022	5/26/2022	8/30/2022	11/16/2022
	Depth Sampled (feet)	13	13	13	17	11	11	15	11	11	11	11	15	15
	Sampled By	ENW												
	Location													
Constituent of Interest	Note	μg/L (ppb)												
`										_				
Dichloroethene, 1,1-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, cis-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, trans-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	C, V	0.500	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Trichloroethene	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	0.054	0.2	0.10	0.063	<0.02 (ND)

Notes:

ug/L = micrograms per Liter or parts per billion (ppb).

<# (ND) = not detected at or above the laboratory method reporting limit shown.</p>

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nc = noncarcinogenic

v = volatile

nv = nonvolatile

<sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

(Y) indicates analyte not detected, but detection limit is above screening concentration.

#### Table 3 - Summary of Analytical Data, Monitoring Wells

	EMW01-I								EMW01-D							
Sample ID		EMW01-I	EMW01-I	EMW01-I	EMW01-I	EMW01-I	EMW01-I	EMW01-I	EMW01-I	EMW01-I	EMW01-D	EMW01-D	EMW01-D	EMW01-D	EMW01-D	EMW01-D
Date Sampled		9/10/2013	12/19/2013	3/12/2014	6/17/2014	5/17/2021	8/11/2021	11/11/2021	2/3/2022	5/26/2022	5/17/2021	8/11/2021	11/11/2021	2/3/2022	2/3/2022	5/26/2022
Depth Sampled (feet)		53.8	53.8	53.8	53	54	53	53	53	53	80	80	80	80	80	80
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		SE corner of subject property														
Constituent of Interest	Note	μg/L (ppb)	μg/L (ppb)	µg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	µg/L (ppb)	µg/L (ppb)	μg/L (ppb)	µg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)
					<b></b>	<b>,</b>					~~~~	<del></del>		<b>p</b>	·	
Dichloroethene, 1,1-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, cis-1,2-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, trans-1,2-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	c, v	<2 (ND)	<3 (ND)	<4 (ND)	<5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)						
Trichloroethene	c, v	<2 (ND)	<3 (ND)	<4 (ND)	<5 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	c, v	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)

Notes:

ug/L = micrograms per Liter or parts per billion (ppb).

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— = not analyzed or not applicable.

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(Y) indicates analyte not detected, but detection limit is above screening concentration.

<sup>&</sup>lt;sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

	Location ID							EMV	V02-S					
	Sample ID	EMW02-S												
	Date Sampled	9/10/2013	12/18/2013	3/12/2014	6/17/2014	9/16/2020	2/9/2021	5/18/2021	8/11/2021	11/10/2021	2/3/2022	5/26/2022	8/30/2022	11/16/2022
	Depth Sampled (feet)	14.9	10	10	15	14	14	15	14.8	15	15	15	15	15
	Sampled By	ENW												
	Location							West of	suite 1250					
Constituent of Interest	Note	μg/L (ppb)												
•														
Dichloroethene, 1,1-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, cis-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1.2	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, trans-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Trichloroethene	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	0.16	0.04	0.16	0.038	0.037

Notes:

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nc = noncarcinogenic

v = volatile nv = nonvolatile

Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

						EMW02-I									EMW02-D				
	Location ID			1	1	LIVIVOZ-I						1	II.		LWWV02-D				
	Sample ID	EMW02-I	EMW02-D																
]	ate Sampled	9/10/2013	12/18/2013	3/12/2014	6/17/2014	5/17/2021	8/11/2021	11/11/2021	2/3/2022	5/27/2022	9/10/2013	12/18/2013	3/12/2014	6/17/2014	5/17/2021	8/11/2021	11/11/2021	2/3/2022	5/27/2022
Depth S	ampled (feet)	50	50	50	50	50	50	50	50	50	80	80	80	80	80	80	80	80	79
	Sampled By	ENW																	
	Location									West of s	suite 1250								
Constituent of Interest	Note	μg/L (ppb)																	
•																			
Dichloroethene, 1,1-	nc, v	<1 (ND)																	
Dichloroethene, cis-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, trans-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Trichloroethene	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)

Notes:

ug/L = micrograms per Liter or parts per billion (ppb).

<sup>&</sup>lt;# (ND) = not detected at or above the laboratory method reporting limit shown.</p>

<sup>— =</sup> not analyzed or not applicable.

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<sup>&</sup>lt;sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

<sup>(</sup>Y) indicates analyte not detected, but detection limit is above screening concentration.

	Location ID							EMW03-S	8					
	Sample ID	EMW03-S	EMW03-S	EMW03-S	EMW03-S	EMW03-S	EMW03-S	EMW03-S						
	Date Sampled	9/10/2013	12/18/2013	3/12/2014	6/17/2014	9/16/2020	2/9/2021	5/18/2021	8/12/2021	11/11/2021	2/2/2022	5/26/2022	8/30/2022	11/17/2022
	Depth Sampled (feet)	15	15	15	15	15	15	15	15	15	15	15	15	15
	Sampled By	ENW	ENW	ENW	ENW	ENW	ENW	ENW						
	Location							West of suite	1220					
Constituent of Interest	Note	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)						
`														
Dichloroethene, 1,1-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, cis-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, trans-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	C, V	0.930	0.690	0.530	0.740	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Trichloroethene	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	0.14	0.040	0.12	0.10	0.12

ug/L = micrograms per Liter or parts per billion (ppb).
<# (ND) = not detected at or above the laboratory method reporting limit shown.

— = not analyzed or not applicable.
 c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

<sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

	Location ID					EMW03-I						EMW	/03-D	
	Sample ID	EMW03-I	EMW03-I	EMW03-I	EMW03-D	EMW03-D	EMW03-D	EMW03-D						
	Date Sampled	9/10/2013	12/18/2013	3/12/2014	6/17/2014	5/17/2021	8/11/2021	11/11/2021	2/2/2022	5/27/2022	9/10/2013	12/18/2013	3/12/2014	6/17/2014
	Depth Sampled (feet)	55	55	55	55	55	55	55	55	54	85	85	85	85
	Sampled By	ENW	ENW	ENW	ENW	ENW	ENW	ENW						
	Location						٧	Vest of suite 122	0					
Constituent of Interest	Note	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)						
`														
Dichloroethene, 1,1-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Dichloroethene, cis-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Dichloroethene, trans-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Tetrachloroethene (PCE)	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	0.53	<0.5 (ND)
Trichloroethene	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)

Notes:

ug/L = micrograms per Liter or parts per billion (ppb).

<# (ND) = not detected at or above the laboratory method reporting limit shown.</p>

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

<sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

	Location ID							EMW04-S						
	Sample ID	EMW04-S	EMW04-S	EMW04-S	EMW04-S	EMW04-S	EMW04-S	EMW04-S						
	Date Sampled	9/10/2013	12/18/2013	3/12/2014	6/17/2014	9/16/2020	2/9/2021	5/18/2021	8/11/2021	11/11/2021	2/2/2022	5/26/2022	8/30/2022	11/17/2022
	Depth Sampled (feet)	15	15	15	15	15	15	15	15	15	15	15	15	15
	Sampled By	ENW	ENW	ENW	ENW	ENW	ENW	ENW						
	Location						Ti-	of subject propert	у					
Constituent of Interest	Note	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)						
			-		•					1	1		1	
Dichloroethene, 1,1-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, cis-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, trans-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Trichloroethene	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)

Notes:

ug/L = micrograms per Liter or parts per billion (ppb).

<# (ND) = not detected at or above the laboratory method reporting limit shown.</p>

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolati

<sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

	Location ID					EMW04-	·l								EMW04-	D			
	Sample ID	EMW04-I	EMW04-I <sup>1</sup>	EMW04-I <sup>1</sup>	EMW04-D	EMW04-D	EMW04-D	EMW04-D	EMW04-D	EMW04-D	EMW04-D	EMW04-D <sup>1</sup>	EMW04-D <sup>1</sup>						
	Date Sampled	9/10/2013	12/18/2013	3/12/2014	6/17/2014	5/17/2021	8/11/2021	11/11/2021	2/3/2022	5/27/2022	9/10/2013	12/18/2013	3/12/2014	6/17/2014	5/17/2021	8/11/2021	11/11/2021	2/3/2022	5/27/2022
	Depth Sampled (feet)	55	55	55	55	55	55	55	55	55	80	80	80	80	80	80	80	80	80
	Sampled By	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW							
	Location									Center of su	bject property								
Constituent of Interest	Note	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)							
Dichloroethene, 1,1-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)							
Dichloroethene, cis-1,2-	nc, v	0.680	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, trans-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Trichloroethene	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)

Notes:

ug/L = micrograms per Liter or parts per billion (ppb).

<sup>&</sup>lt;# (ND) = not detected at or above the laboratory method reporting limit shown.</p>

<sup>— =</sup> not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

Table 3 - Summary of Analytical Data, Monitoring Wells

	Location ID						EMW	/05-S				
	Sample ID	EMW05-S	EMW05-S	EMW05-S	EMW05-S	EMW05-S	EMW05-S	EMW05-S	EMW05-S	EMW05-S	EMW05-S	EMW05-S
	Date Sampled	9/10/2013	12/18/2013	3/11/2014	6/17/2014	9/16/2020	2/9/2021	5/18/2021	8/11/2021	11/11/2021	2/2/2022	5/26/2022
	Depth Sampled (feet)	12	12	12	12	12	12	12	12	12	12	12
	Sampled By	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
	Location						N central area of	subject property				
Constituent of Interest	Note	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)					
Dichloroethene, 1,1-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, cis-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, trans-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Trichloroethene	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)

Notes:
ug/L = micrograms per Liter or parts per billion (ppb).
<# (ND) = not detected at or above the laboratory method reporting limit shown.

<sup>— =</sup> not analyzed or not applicable.

c = carcinogenic nc = noncarcinogenic

v = volatile

nv = nonvolatile

<sup>&</sup>lt;sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

<sup>(</sup>Y) indicates analyte not detected, but detection limit is above screening concentration.

	Location ID						EMW05	-l									EMW05-	D			
	Sample ID	EMW05-I	EMW05-I	EMW05-D																	
	Date Sampled	9/10/2013	12/18/2013	3/11/2014	6/17/2014	5/17/2021	8/11/2021	11/11/2021	2/2/2022	5/27/2022	8/31/2022	11/17/2022	9/10/2013	12/18/2013	3/11/2014	6/17/2014	5/17/2021	8/11/2021	11/11/2021	2/2/2022	5/27/2022
	Depth Sampled (feet)	55	55	55	55	55	55	55	55	55	55	55	80	80	80	79	80	80	80	80	80
	Sampled By	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW									
	Location										N central area o	f subject proper	ty								
Constituent of Interest	Note	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)									
Disklarathan 4.4		-4 (NID)	-4 (NID)	-4 (NID)	+4 (ND)	-4 (NID)	44 (NID)	-4 (ND)	-4 (NID)	-4 (NID)	-4 (NID)	-4 (NID)	-44 (NID)	44 (NID)	-4 (NID)	44 (NID)	44 (ND)				
Dichloroethene, 1,1-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)									
Dichloroethene, cis-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, trans-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	C, V	0.610	1.62	<0.5 (ND)	0.560	3.0	1.8	4.1	2.2	2.3	1.6	2.5	<0.5 (ND)	0.660	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Trichloroethene	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)

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Notes:

ug/L = micrograms per Liter or parts per billion (ppb).

<# (ND) = not detected at or above the laboratory method reporting limit shown.

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**ENW** 

<sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

Table 3 - Summary of Analytical Data, Monitoring Wells

	Location ID						EMW	V06-S				
	Sample ID	EMW06-S	EMW06-S	EMW06-S	EMW06-S	EMW06-S						
	Date Sampled	9/10/2013	12/18/2013	3/11/2014	6/17/2014	9/16/2020	2/9/2021	5/18/2021	8/11/2021	11/11/2021	2/2/2022	5/26/2022
	Depth Sampled (feet)	11.7	15	15	11	12	12	12	13	13	13	13
	Sampled By	ENW	ENW	ENW	ENW	ENW						
	Location						1	of property				
Constituent of Interest	Note	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)						
`									•	-	,	
Dichloroethene, 1,1-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, cis-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, trans-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Trichloroethene	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	C, V	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)

ug/L = micrograms per Liter or parts per billion (ppb).
<# (ND) = not detected at or above the laboratory method reporting limit shown.

— = not analyzed or not applicable.
 c = carcinogenic
 nc = noncarcinogenic

v = volatile nv = nonvolatile

<sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct

contact (excavation).

	Location ID						EMW06	i-I										EMW06-	D				
	Sample ID	EMW06-I	EMW06-D	EMW06-D	EMW06-D	EMW06-D	EMW06-D	EMW06-D	EMW06-D	EMW06-D	EMW06-D	EMW06-D	EMW06-D										
	Date Sampled	9/10/2013	12/18/2013	3/11/2014	6/17/2014	5/17/2021	8/11/2021	11/11/2021	2/2/2022	5/27/2022	8/31/2022	11/17/2022	9/10/2013	12/18/2013	3/11/2014	6/17/2014	5/17/2021	8/11/2021	11/11/2021	2/2/2022	5/26/2022	8/31/2022	11/17/2022
	Depth Sampled (feet)	51	50	50	51	51	51	51	51	51	51	51	80	80	80	80	80	80	80	80	80	80	80
	Sampled By	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW											
	Location											NE corner	r of property										
Constituent of Interest	Note	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)											
`																							
Dichloroethene, 1,1-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)											
Dichloroethene, cis-1,2-	nc, v	59.5	36.7	16.9	32.3	13	25	23	12	5.9	19	22	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, trans-1,2-	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	C, V	66.8	39.7	20.4	50.1	38	79	78	54	35	57	91	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Trichloroethene	C, V	43.3	27.6	13.4	27.5	16	33	33	22	11	27	31	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	C, V	2.27	1.15	<0.5 (ND)	1.00	<0.2 (ND)	<0.2 (ND)	0.23	0.12	0.045	0.18	0.17	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.2 (ND)	<0.2 (ND)	0.077	0.14	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)

ug/L = micrograms per Liter or parts per billion (ppb).

<# (ND) = not detected at or above the laboratory method reporting limit shown.</p>

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile nv = nonvolatile

<sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct

contact (excavation).

	Location ID					EMW07 -S									EMW08 -S				
	Sample ID	EMW07-S	EMW07-S	EMW07-S	EMW07-S	EMW07-S	EMW07-S	EMW07-S	EMW07-S	EMW07-S	EMW08-S	EMW08-S	EMW08-S	EMW08-S	EMW08-S	EMW08-S	EMW08-S	EMW08-S	EMW08-S
	Date Sampled	9/16/2020	2/9/2021	5/18/2021	8/11/2021	11/11/2021	2/3/2022	5/26/2022	8/31/2022	11/16/2022	9/16/2020	2/9/2021	5/18/2021	8/12/2021	11/11/2021	2/3/2022	5/26/2022	8/31/2022	11/16/2022
	Depth Sampled (feet)	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	Sampled By	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
	Location				Centra	al east property bo	oundary							Е	side of S Main Str	eet			
Constituent of Interest	Note	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)				
																		_	
Dichloroethene, 1,1-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)				
Dichloroethene, cis-1,2-	nc, v	24	160	240	82	45	2.3	3.2	19	10	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)				
Dichloroethene, trans-1,2-	nc, v	<1 (ND)	<1 (ND)	2.1	1.4	1.2	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)								
Tetrachloroethene (PCE)	C, V	87	<1 (ND)	1.4	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Trichloroethene	C, V	38	<1 (ND)	<1 (ND)	<1 (ND)	1.2	<0.5 (ND)	<0.5 (ND)	1.4	<0.5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Vinyl chloride	C, V	0.31	4.6	37	53	23	1.6	1.8	6.7	5.4	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	0.026	0.059	0.034

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v = volatile nv = nonvolatile

<sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

Table 3 - Summary of Analytical Data, Monitoring Wells

	Location ID	MW-7D (0	DDEQ Well)				Quality Conti	rol Duplicates			
	Sample ID	MW07-D	MW07-D	EMWFD/GW- 200916	EMWFD/GW- 210209	EMWFD/GW- 210518	MWFD-GW- 210811	MWFD-GW- 211111	EMWFD-GW- 220203	MWFD-GW- 220527	MWFD-GW- 220830
	Date Sampled	8/12/2021	11/11/2021	9/16/2020	2/9/2021	5/18/2021	8/11/2021	11/11/2021	2/3/2022	5/27/2022	8/30/2022
	Depth Sampled (feet)	78	78								
	Sampled By	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
	Location	S side of W	Elmore Street	duplicate of EMW1-S	duplicate of EMW08-S	duplicate of EMW04-S	duplicate of EMW04-S	duplicate of EMW07-S	duplicate of EMW02-S	duplicate of EMW06-I	duplicate of EMW04-S
Constituent of Interest	Note	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)
•											
Dichloroethene, 1,1-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloroethene, cis-1,2-	nc, v	12	10	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	40	<1 (ND)	6.0	<1 (ND)
Dichloroethene, trans-1,2-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1.1	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	C, V	14	35	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	35	<1 (ND)
Trichloroethene	C, V	8.4	7.6	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1.1	<0.5 (ND)	11	<0.5 (ND)
Vinyl chloride	C, V	<0.2 (ND)	<0.02 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	19	0.041	0.040	<0.02 (ND)

Notes:

ug/L = micrograms per Liter or parts per billion (ppb).

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<sup>— =</sup> not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

<sup>&</sup>lt;sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

<sup>(</sup>Y) indicates analyte not detected, but detection limit is above screening concentration.

Location ID  Quality Control Trip Blanks														Maximum Ground	nd Maximum Ground	Maximum Ground			
Sample ID  Date Sampled  Depth Sampled (feet)  Sampled By		Trip Blank	7rip Blank 2/9/2021  ENW	Trip Blank	Trip Blank	Trip Blank 8/12/2021  ENW	Trip Blank 11/10/2021 ENW	Trip Blank 11/11/2021 ENW	Trip Blank 2/2/2022 ENW	Trip Blank- 220527 5/27/2022  ENW	Trip Blank- 220527 5/27/2022  ENW	Trip Blank- 220831 8/31/2022  ENW	Trip Blank 221116 11/16/2022  ENW	Trip Blank 221117 11/17/2022  ENW	Concentration - Shallow Water- Bearing Unit (Last Four Monitoring Events, QC	Water Concentration (Intermediate Water-Bearing Unit Post- Remediation Monitoring, Last	Water Concentration (Deeper Water- Bearing Unit, Post- Remediation	Lowest Applicable RBC (Ground Water in an Excavation - Construction/Exc	Water-Bearing Unit)
		9/16/2020		5/18/2021  ENW	8/11/2021  ENW														
		ENW																	
	Location		Trip Blank											samples excluded)	Four Monitoirng Events)	Four Monitoirng Events)		TRUE OR Y FALSE OR N	
Constituent of Interest	Note	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)	μg/L (ppb)		
•																			
Dichloroethene, 1,1-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	44,000	N
Dichloroethene, cis-1,2-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	19	<22 (ND)	<1 (ND)	18000	N
Dichloroethene, trans-1,2-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1	<1 (ND)	<1 (ND)	180000	N
Tetrachloroethene (PCE)	C, V	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	91	<1 (ND)	5,600	N
Trichloroethene	C, V	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	1.4	31	<1 (ND)	430	N
Vinyl chloride	C, V	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	6.7	0.18	0.14	960	N

Notes:

ug/L = micrograms per Liter or parts per billion (ppb).

<# (ND) = not detected at or above the laboratory method reporting limit shown.

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

<sup>1</sup> Lowest Risk-Based Concentration for ground water for vapor intrusion into building (occupational) and direct contact (excavation).

### Table 4 - Summary Analytical Data, Sub-Slab Vapor and SSD Vent Monitoring

Sample II Date Sample Depth Sampled (fee	P02-AIR 1 7/28/2008 ) ? y BB&A	SSD-VENT- 130212 2/12/2013 VENT ENW	VENT-170906 9/6/2017 VENT ENW	VENT-170926 9/26/2017 VENT ENW	SUB01-170926 9/26/2017 Subslab ENW	SUB02-170926 9/26/2017 Subslab ENW	SUB03-170926 9/26/2017 Subslab ENW	SUB04-170926 9/26/2017 Subslab ENW	SUB05-170926 9/26/2017 Subslab ENW	SUB06-170926 9/26/2017 Subslab ENW	VENT-221121 11/21/2022 VENT ENW	VENT-221129 11/29/2022 VENT ENW	SUB07-221129 11/29/2022 Subslab ENW	SUB08-221129 11/29/2022 Subslab ENW	Maximum Soil- Gas Concentration	Maximum Soil- Gas Concentration	ODEQs RBCs (Soil Gas,	ODEQs RBCs (Soil Gas,	Constituent of Concern (COC)
Sampled B  Locatio	West central storefront	Sampling port in stack of SSD system at 1220 S Main Street	Vent sampling prior to shutting down	Vent sampling after shutting down the system for 2 weeks.			In former Union Cleaners II space with subslab system.		In PnK, adjacent and north of the subslab system		Vent sampling prior to shutting down the system		In tenant space 1240 immediately south of former Union Cleaners II space	In southeast corner of former Union Cleaners II space with subslab system	(pre-remediation)	(post- remediation)	Occupational Worker) <sup>1</sup>	Occupational Worker) <sup>1</sup>	TRUE OR Y FALSE OR N
Constituent of Interest Note	μg/m³	μg/m³	μg/m <sup>3</sup>	μg/m <sup>3</sup>	μg/m³	μg/m³	μg/m³	μg/m <sup>3</sup>	μg/m <sup>3</sup>	μg/m <sup>3</sup>	μg/m³	μg/m <sup>3</sup>	μg/m <sup>3</sup>	μg/m³	μg/m <sup>3</sup>		μg/m³		
Volatile Organic Constituents (Detected)																			
Dichloroethene, 1,1- nc, v	16000	<3.3 (ND)	<11.4 (ND)	<11.79 (ND)	<10.71 (ND)	<10.81 (ND)	<11.89 (ND)	<10.9 (ND)	<11 (ND)	<11.69 (ND)					16000		6950	880000	
Dichloroethene, cis-1,2-	490000	2.1	13.25	23.75	<11.61 (ND)	<11.72 (ND)	845.54	<11.83 (ND)	<11.93 (ND)	<12.68 (ND)	<10.68 (ND)	<10.68 (ND)	<3.56 (ND)	<3.56 (ND)	490000	<10.68 (ND)	1390	>Pv	N
Dichloroethene, trans-1,2-	6100	<3.3 (ND)	<8.29 (ND)	<8.58 (ND)	<7.79 (ND)	<7.87 (ND)	<8.65 (ND)	<7.94 (ND)	<8.01 (ND)	<8.51 (ND)					6100		1390	260000	
Tetrachloroethene (PCE) c, v	79000	120	169.47	356.99	304.36	384.36	160.04	<9.16 (ND)	17.75	55.23	15.30	18.83	109.23	32.27	79000	109.23	360	47,000	N
Trichloroethene c, v	160000	11	46.06	154.61	38.20	478.97	7489.29	37.90	<14.01 (ND)	65.08	2.24 J	<12.53 (ND)	1.62 J	0.76 J	160000	2.24 J	15.9	2,900	N
Vinyl chloride c, v	140000	<2.1 (ND)	<7.45 (ND)	<7.71 (ND)	<7 (ND)	<7.07 (ND)	<7.78 (ND)	<7.13 (ND)	<7.2 (ND)	<7.65 (ND)	<6.44 (ND)	<6.44 (ND)	<2.15 (ND)	<2.15 (ND)	140000	<6.44 (ND)	5.59	2,800	N
Leak Detection													Leak-check Screening Level		Leak Indicated?				
2-Propanol	157	2359.88	<16.36 (ND)	89.02	54.63	79.89	20.41	19.63	<15.79 (ND)	10.90	246.30	4843.86	1305.77	482.54	4843.9	4843.9	5000		N

Page 1 of 1

ND = not detected at or above laboratory method reporting limits.

— = not analyzed or not applicable.
 < = not detected above method reporting limit shown.
 NE = not established.

ug/m³ = micrograms per cubic meter of air . c = carcinogenic

ENW

nc = noncarcinogenic v = volatile

<sup>1</sup> Lowest Applicale Onsite Risk-Based Concentration for soil

gas/sub-slab vapor (based on prevous risk assessment). <sup>2</sup> EPA Vapor Instrusion Screening Level of Residential Property

J = the amount reported is estimated because it was below the RL and could be below the lowest calibration point, have higher uncertainty, or could be the result of system background.

>Pv = indicates this constituent cannot present an unacceptable health risk by the vapor intrusion pathway