State of Oregon
Department of Environmental Quality Memorandum

Date: 7/31/2023

To: FILE

Through: Brad Schultz, WR Cleanup Manager

From: Donald Hanson
Western Region

Subject: Edgewood Cleaners, ECSI 4586; Staff Memorandum in support of a Conditional No Further Action determination

This document presents the basis for the Oregon Department of Environmental Quality's (DEQ's) recommended No Further Action (NFA) determination for the Edgewood Cleaners site, in Eugene. As discussed in this report, with conditions, contaminant concentrations in soil, groundwater, and soil vapor are below acceptable risk levels.

The proposed NFA determination meets the requirements of Oregon Administrative Rules Chapter 340 Division 122, Sections 010 to 0140; and ORS 465.200 through 465.455.

The proposal is based on information documented in the administrative record for this site. A copy of the administrative record index is presented at the end of this report.

1. BACKGROUND

Site location.
The site's location can be described as follows:

- 370 E. 40th Street, Eugene, OR 97405
- 44 Deg, 00' 38.73 N; 122 Deg, 05' 13.93 W
- Lot 1, Block 3 Edgewood Estates, Township 18S Range 3W Section 18

Site setting.
The shopping center Site consists of approximately 4.5 acres of land developed with an 'L' shaped commercial building with multiple tenants. The building is located along the western and southern Site boundaries, and an additional single-story square commercial building with a single tenant is in the northeastern quadrant of the Site (Figure 2).

Adjacent land use consists of single-family residences addressed as 315, 345, 375 and 395 E. 41st Avenue to the south; single-family residences to the west, an electric utility substation and multi-family duplexes on East 40th Avenue to the north and the Edgewood Villa Condominiums addressed on Donald Street to the east.

According to the City of Eugene Planning Division, the Site is zoned C-2, community commercial.

Physical setting.

- Topography: The site is in a slightly hilly part of south Eugene, but the shopping center property itself is relatively flat, with a gentle slope downward to the north/northeast. The street to the south (E. 41st. Ave) is about 10 feet higher in elevation than the southern part of the shopping center. E. 40th Ave. to the north is about 12 feet lower in elevation than the southern part of the shopping center.
- Groundwater: The depth to shallow groundwater varies across the site, but it is all relatively shallow. It is shallowest on the north end of the site, near monitoring well MW-6, where it ranges from about 1.5 feet to 2 feet below ground surface (bgs). Depth to groundwater is deeper on the south side of the site. At MW-4 groundwater depths have ranged from about 5 to 9 feet bgs.
- Geology: An unconsolidated brown silty sand, silt, or clay unit overlies the bedrock, which underlies the site about 10-15 feet bgs. The bedrock is Eugene Formation sandstone. The water bearing zone of interest at the Site is the saturated portion of the unconsolidated sands, silts and clays above the bedrock.
- Groundwater flow: Groundwater beneath the site flows from south to north/northeast, following the surface topography at and around the site.

Site history.

Prior to 1968 and extending to at least 1944, the shopping center Site was undeveloped land covered with native vegetation. In 1968, the Site was developed with an 'L' shaped building along the west and south side, two irregular-shaped buildings in the northeast corner, and a parking lot covering the remaining portion.

A dry cleaner operated in one ground floor suite on the east/west wing of the strip mall shopping center (Figure 2). The cleaners was operated as Siegmund's Cleaners and possibly other business names.

2. BENEFICIAL LAND AND WATER USE DETERMINATIONS

Land use.

According to the City of Eugene Planning Division, the Site is zoned C-2, community commercial. According to the City of Eugene Planning Department, the C-2 Community Commercial zone is designed to implement the comprehensive plan by providing areas for community commercial uses. These areas usually include at least 5 acres and not more than 40 acres and are intended to include a wide range of purchaser goods and entertainment, office, and service needs for a support population smaller than that of the metropolitan area but larger than that of a neighborhood. Housing is also permitted in this zone, which may occur independently on individual lots or parcels, or be located in clusters that share parking facilities and other common areas.

Adjacent land use consists of single-family residences addressed as 315, 345, 375 and 395 E. 41stAvenue to the south; single-family residences to the west, an electric utility substation and multi-family duplexes addressed as 414-425, 435-45 East 40th Avenue to the north and the Edgewood Condominiums addressed as 4023 and 4083 Donald Street to the east.

Groundwater use.
There are no current beneficial uses of groundwater in the vicinity of the site; and it is unlikely that there will be in the future. The City of Eugene Water and Electric Board (EWEB) obtains municipal drinking water from the McKenzie River, located approximately 11 miles northeast of the Site. All commercial units at the Site are served by municipal water from EWEB; no private water supply wells are located on-Site or in the vicinity of the Site.

A beneficial water use determination was conducted by Stantec on February 28, 2018 in accordance with DEQ's *Guidance for Conducting Beneficial Water Use Determinations at Environmental Cleanup Sites* (DEQ 1998). The Oregon Water Resources Department (WRD) well log database was searched for Township 18 South, Range 3 West, Sections 7, 8, 17, 18, 19 and 20 and Township 18 South, Range 4 West, Sections 12, 13 and 24. According to Stantec's survey, no domestic water supply wells were listed within a 2-mile radius of the Site. The nearest domestic well reported by WRD is located at 31537 Glenfiddish Way, approximately 2.5 miles to the south-southwest of the Site. This well was installed in 1996 to a depth of 143 feet bgs and first water was encountered during drilling at a reported depth of 110 feet bgs.

Surface water use.
Surface water at the site runs into catch basins that flow to city storm drains. There is no exposed soil that could run off and affect surface water. The nearest surface water is Tugman Creek which daylights at the base of the former Tugman Park Landfill, about 1,500 feet northeast of the Site. Tugman creek discharges to Amazon Creek east of the park.

3. INVESTIGATION AND CLEANUP WORK

Many phases of environmental investigation and cleanup have been conducted at the site, apparently since about 1992. The investigation history is covered in more detail in the Independent Cleanup Pathway (ICP) Final Report (4/18/2023) by Stantec. DEQ became aware of Siegmund's Cleaners in 2006, and it was added to the Environmental Cleanup Site Information (ECSI) database. By that time eight monitoring wells had already been installed at the site, and groundwater monitoring was done for a leaking underground storage tank (LUST) site (LUST 20-91-4095, "McCool Property").

The contamination associated with the dry cleaners was discovered when dry cleaning solvent tetrachloroethylene (PCE or Perc) was detected in groundwater from monitoring wells at the site. The site has been investigated by sampling soil, groundwater soil gas, sub-slab vapors, and indoor air, both on-site and off-site. Contaminants of concern at the Edgewood Cleaners site

include mainly PCE, but also much lower levels of trichloroethylene (TCE), and cis-1,2-dichloroethylene (cis-DCE). TCE and cis-DCE are breakdown products of PCE.

Sampling focused mainly on the shopping center property, with a focus on the vicinity of the former Sigmund's Cleaners space (Figure 2), where the releases originated. The highest levels of contamination were found behind (south) of the cleaners shop, between the shopping center and residential areas south of the shopping center. This area may have been where spent dry cleaner machine filters or other media were stored or dumped in the past. This area was the focus of the 2020 soil removal, described below.

Sampling was also done off-site to the south, east and north of the site, on residential properties, to determine the levels of impacts to those properties from the contamination (Figures 4a, 4b and 5). These investigations included:

- Collecting soil gas samples from the backyards at three residential properties immediately sough of the former cleaners and the soil hot spot
- Collecting soil gas and indoor air samples from the Edgewood Villa Condominiums located east of the site on Donald Street.
- Collecting groundwater and soil gas samples near the Edgewood Animal Hospital building and an air sample from inside the animal hospital.
- Collecting groundwater, soil gas, sub-slab vapor, and indoor air samples at selected residential properties north of the site, north of E. 40th Avenue.

Groundwater treatment

Shallow groundwater was treated in the vicinity of monitoring well MW-5 in 1994, which was not effective in reducing contamination levels. In 2004 hydrogen peroxide was introduced into MW-5 weekly for six weeks. PCE concentrations reportedly decreased from 35,700 µg/L to 7,540 µg/L in MW-5. At some point prior to 2004, a 4-inch diameter well was installed immediately south of MW-5, apparently to be used for groundwater treatment (construction details unknown).

Seven boreholes (Wells I-1 through I-4 and E-1 through E-3) were installed in July 2011 for remedial injection and extraction pilot test purposes. Additionally, a shallow injection trench was installed near the southern Site boundary behind the former dry cleaners.

Between August and October 2011 Stantec injected approximately 5955 gallons of 5% sodium permanganate (NaMnO4) into treatment wells in the vicinity of MW-5. No significant reduction in COIs was noted in post injection groundwater monitoring events.

Soil Removal

An Interim Removal Action (IRA) was performed at the Site in May 2020, which included:

- Construction of a temporary on-Site groundwater treatment system using filtration and a 2,000- pound activated carbon vessel.

- Abandonment of groundwater monitoring wells MW-5 and DW-1 within the IRA excavation footprint in accordance with Oregon Water Resources Department requirements.
- Excavation and off-Site disposal of approximately 800 cubic yards of soil suspected to be an ongoing source of the VOC groundwater plume beneath the Site.
- Dewatering of approximately 7,000-gallons from the excavation, on-Site water treatment and permitted disposal to the City-owned sanitary sewer system.
- Collection of soil samples from the final excavation limits.
- Backfilling the excavation and surface restoration; and
- Installation of a replacement ground water monitoring well MW-5R.

Groundwater modeling

Stantec prepared a Technical Memorandum in January 2023, where they predicted how long the groundwater contamination at the site may persist. The model results indicated that while the remedial actions completed at the site should help reduce the contamination at the site, it will take decades to reduce the concentrations on site as well as off-site, downgradient. Groundwater monitoring over the years has consistently shown that there is little natural breakdown of the PCE. One common degradation pathway is by dechlorination. Under anaerobic conditions PCE can degrade to TCE, cis-1,2-DCE, vinyl chloride, ethene, and ethane. Anaerobic dechlorination has not occurred at this site to any significant degree, thus PCE remains the predominant contaminant of concern.

4. RISK EVALUATION

Conceptual site model.

A conceptual site model identifies sources of contamination, pathways by which this contamination could reach human and ecological receptors, and the human and ecological receptors currently and reasonably likely affected, and the degree of their exposure.

To evaluate human exposure to residual chemical contamination requires an assessment of the type and extent of that exposure. This is based on current and reasonably likely future site use. DEQ publishes risk-based concentrations (RBCs) for contaminants commonly encountered, for different types of exposure scenarios. These RBCs are conservative estimates of protective levels of contaminants in soil, groundwater and air. In June 2023 DEQ updated its RBCs for vapor intrusion from groundwater and soil gas. This resulted in significant decreases in RBCs for these pathways. This evaluation uses the newly updated, more conservative, RBCs. Table 1 shows potential exposure pathways and receptors for this site. Based on this, applicable RBCs are identified and used for risk screening.

Table 1. Identification of applicable RBCs, based on pertinent pathways and receptors

	Pathway	*Receptor*	*Pathway Complete*	*RBC Exceeded*	*Comments*
SOIL	Ingestion, dermal contact, and inhalation	Occupational; Excavation & Construction Workers	Yes	No	Source area contaminated soils were excavated in 2021. Lower level soil contamination remains, below RBCs.
	Leaching to Groundwater [1,2]	Occupational and residential	No		No current or reasonably likely future use of shallow groundwater for domestic purposes.
GROUNDWATER	Potential Vapor intrusion to Buildings	Occupational and residential	Yes	***Yes***	Soil gas and air sampling were done to further investigate the VI pathway
	Potential Volatilization to Outdoor Air	Occupational and Residential	Yes	No	Groundwater concentrations are below RBCs.
	Groundwater Ingestion[1,2]	Occupational and Residential	No	N/A	Contamination remains in groundwater, however no reasonably likely future use of shallow groundwater for domestic purposes in the area of contamination.
	Dermal & inhalation	Excavation & Construction Workers	Yes	No*	Concentrations are below the RBC for PCE in monitoring wells MW-1, MW-3 and MW-4 and MW-5R. *Beneath the building it is possible PCE concentrations may exceed the RBC for PCE, which is 5,600 ug/L.
SOIL GAS	Potential vapor intrusion into buildings	Occupational	Yes	**Yes**	Indoor air sampling was done to demonstrate air concentrations were consistently below RBCs.
		Residential	Yes	**Yes**	Soil gas concentrations exceeded RBCs in some residential areas. Where they were, indoor air sampling was done to show levels were below air RBCs.
INDOOR AIR	Vapor Intrusion into Building air	Occupational	Yes	No	Air sampling has demonstrated that concentrations are below indoor air RBCs. On site, the shopping center slab is currently very effective in keeping vapors from moving up into the indoor airspace.
		Residential	Yes	No	
ECOLOGICAL	Ecological	None	N/A	N/A	Site is paved. No contamination at/near surface, no potential runoff of contaminants to surface waters

Notes:

1. Groundwater is not used for drinking. This pathway is therefore not considered, in accordance with Section B.3.2.4 of DEQ's RBDM guidance.
2. City water is provided. Local groundwater is not currently used for drinking water and is not likely to be used for this purpose in the future.

Contaminant concentrations. Sampling results are summarized in the Independent Cleanup Pathway report, which is available at the DEQ project website (link below).
https://www.deq.state.or.us/Webdocs/Forms/Output/FPController.ashx?SourceId=4586&SourceIdType=11

Soil. Soil contamination was focused in the source area in the vicinity of former well MW-5. Most of the areas where soil contamination was detected were removed during the 2020 soil removal action. The main COC in soil was PCE, with TCE also detected, but at lower levels. The highest PCE concentration in soil prior to the removal action was 0.51 mg/Kg.

Groundwater Onsite. PCE concentrations in shallow groundwater in the source area well MW-5 were detected as high as 140,000 µg/L, in 2010. Downgradient from this area, on the north side of the shopping center building at MW-4 the PCE levels averaged about 5,000 µg/L. MW-5 was removed to accommodate soil removal, and replacement well MW-5R was installed within the area that was excavated and filled in clean fill. Water samples from replacement well MW-5R have contained PCE at levels ranging from 1,320 to 86 µg/L. PCE concentrations at well MW-4 have not shown any significant declines in concentrations since the cleanup, fluctuating from around 6,000 to 3,600 µg/L. The highest TCE concentration detected was 143 µg/L at MW-5, however the concentrations of TCE were likely higher than this in the source area, but were masked by elevated detection limits, caused by the extremely high PCE concentrations in the early samples.

The only likely pathway of exposure to people to the shallow groundwater contamination is by contact by construction workers while working in excavations that could have groundwater in them. DEQ has RBCs for groundwater in excavations, which are 5,600 µg/L for PCE and 430 µg/L for TCE. Therefore, it is possible that there are areas of the site, especially in uninvestigated areas in the vicinity of the shopping center building, that could sometimes have groundwater containing PCE at levels that exceed the water-in-excavation RBC.

Groundwater Off-Site

City Rights-Of-Way Groundwater. The groundwater contaminant plume tends to migrate north or slightly northeast, toward the intersection of E. 40th Ave. and Donald St. Concentrations near the intersection are best approximated by looking at data from monitoring well MW- 6. Monitoring data and modeling conducted by Stantec show and predict pretty stable concentrations of PCE and TCE for several years, if not decades. The PCE concentrations moving off-site at MW-6 have been and are expected to range from about 700 to 900 µg/L. TCE concentrations are expected to range from about 20 to 30 µg/L. DEQ has RBCs for groundwater in excavation, which are 5,600 µg/L for PCE and 430 µg/L for TCE. Therefore, the concentrations one would expect to encounter beneath the right-of-way are well below DEQ's acceptable risk levels.

Other Off-Site Area Groundwater. Groundwater contamination likely migrates northward beyond the intersection. With the exception of excavation/construction workers, it is not anticipated that people would come into contact with the water. The concentrations of groundwater off-site are below RBCs for water in excavations.

Soil Vapor On-Site. Soil vapors sampled at the shopping center have detected PCE at levels that exceeded RBCs for vapor intrusion for commercial and residential land uses. Most of the exceedances were in the vicinity of the former Edgewood Cleaners store. Concentrations have ranged as high as 88,000 micrograms per cubic meter ($\mu g/m^3$) back in summer 2009. Because elevated PCE concentrations were detected in some soil gas samples, indoor air sampling was conducted, in accordance with DEQ guidance. Further downgradient, near the intersection of E. 40th Ave. and Donald Street, PCE was detected at 720 $\mu g/m^3$, which is below the current PCE RBC for commercial vapor intrusion.

Indoor Air On-Site. In 2009 and 2010, because of the elevated levels of PCE in the soil gas beneath the east wing of the shopping center, indoor air testing was conducted there, and in the vet clinic. PCE detections in all of the spaces were below DEQ's current air RBC for commercial buildings. TCE concentrations, when detected, were also below our current RBC. Low levels of gasoline-related VOCs and other volatiles were also detected at levels below the commercial RBCs.

Soil Vapor Intrusion Assessment Off-Site. Off-site, soil vapor sampling was done at properties south of the site, east of the site (Edgewood Condominiums) and at residential properties to the north, north of E. 40th Avenue.

- Southern residential properties. In September 2009 Stantec collected soil gas samples from three residential backyards located south of the site (Figure 5). PCE was detected at 39 $\mu g/m^3$ at SV-8, 8.4 $\mu g/m^3$ at SV-9. No PCE was detected at SV-10. These concentrations are well below the current RBC for PCE, which is 360 $\mu g/m^3$ for residential property. Vapor intrusion should not be a concern at these properties.

- Edgewood Condominiums. Several rounds of soil gas and indoor air sampling were conducted around and beneath the condos. Sub-slab soil vapor testing from four ground floor locations along Donald Street in February and November 2010 found PCE at concentrations ranging from non-detect to 35 $\mu g/m^3$, which are far below DEQ's current RBC for vapor intrusion (360 $\mu g/m^3$). TCE was detected at levels ranging from non-detect to 9.4 $\mu g/m^3$, well below the RBC, which is 16 $\mu g/m^3$. The soil gas sample locations are shown on Figure 4a.

- Indoor air sampling, and outdoor (background/ambient) air sampling was done at several ground floor locations at and in the vicinity of the condos in February and November 2010. TCE was non-detected for all indoor air samples except one in February 2010 that detected TCE at 2.3 $\mu g/m^3$, which was about twice the urban residential air RBC at that time. The outdoor air sample also had detections of TCE in February, which could have contributed to the detection in the indoor air sample. The presence of TCE and PCE in ambient air samples is not uncommon, especially in urban areas. Indoor air was resampled in November 2010 and TCE was not detected. PCE was detected at very low levels in the indoor air samples, ranging from non-detect to 8.5 $\mu g/m^3$, also with seasonal variations. The PCE concentrations are below DEQ's indoor air RBC, which is 11 $\mu g/m^3$. Based on the low to no detections in indoor air, and the presence of TCE in

outdoor air DEQ, and the low levels of contaminants in the soil gas, DEQ concluded that no further analysis was necessary at the Edgewood Condominiums. The indoor air sample locations are shown on Figure 4b.

- Residences north of E. 40th Ave. Soil vapor sampling from the northeast corner of the shopping center in September 2009 detected PCE in one sample (SV-3) at 720 µg/m^3. This concentration exceeded the residential RBC, which is 360 µg/m^3. Additional soil vapor sampling was therefore done north of 40th Avenue, as described below:

  At 3990 Donald Street (which was operated as a daycare center), crawlspace and indoor air sampling was conducted in 2009 and 2010. Crawlspace air samples were collected in February and November 2010. In those samples, PCE was detected between 0.51 and 0.55 µg/m^3. TCE was detected at 0.23 µg/m^3. All of these crawlspace concentrations are below DEQ's current RBCs for residential indoor air. Indoor air samples were also collected in February and November 2010. Those samples did not detect TCE, but did detect PCE, at 0.82 and 0.87 µg/m^3. These PCE levels are below the current indoor air RBC for PCE, which is 11 µg/m^3. However, in 2010 DEQ's RBC for PCE was lower, so DEQ required a vapor barrier be installed beneath 3990 Donald Street.

  In 2011 DEQ collected crawlspace and indoor air samples at 3990 Donald Street. The indoor air PCE sample result (1.01 µg/m^3) was higher than the crawlspace air sample (0.22 µg/m^3), which we would not expect if the PCE were coming up from the crawlspace. Regardless, the crawlspace and indoor air concentrations were below DEQ current air RBCs and no further vapor intrusion investigations were deemed necessary at this location.

  In 2009, at the duplex located at 435 and 445 E. 40th Avenue, Crawlspace air samples were also collected. PCE was detected in the crawlspace samples at 1.2 µg/m^3, which is well below the current air RBC (11 µg/m^3). No further vapor intrusion investigations were deemed necessary at this location.

  Several non-site related chemicals were detected in the crawlspace samples from residential properties north of the site. These included gasoline related chemicals like benzene, toluene, ethylbenzene and xylenes, and carbon tetrachloride. The concentrations of these other compounds were also below their respective soil vapor RBCs.

Human health risk.

On-Site Vapor Intrusion. Because elevated concentrations of PCE persist in shallow groundwater, over an order of magnitude greater than the vapor intrusion RBCs, and PCE levels measured in soil gas in the vicinity of the shopping center have exceeded DEQ's RBCs for commercial use, there remains a potential for vapor intrusion into commercial buildings at the

site at levels above DEQ's acceptable risk levels. Currently though, at the shopping center, the building slab is acting as an effective barrier to vapor migration, and air samples have been below RBCs. It is important that this protective barrier remain in place, and that conduits, like for utilities, drains, etc, which may penetrate the slab in the future, are well sealed to prevent short circuiting of vapors across the slab, creating a vapor intrusion problem in the workspaces. New buildings constructed at the site may not act as such a good barrier to vapor intrusion. Further, residential construction at on the shopping center site may not be protective of human health, depending on the location of the construction, the construction type, etc.

Off-Site Vapor Intrusion risk.

- Residences south of the shopping center. Soil gas sampling done in the backyards at three properties on the north side of E. 41st. Avenue, nearest the former cleaners detected low levels of site related chemicals. The concentrations were well below DEQ's RBCs for residential vapor intrusion. There should be no exceedances of DEQ cleanup standards for potential vapor intrusion in this area.

- Edgewood Condominiums. Soil gas samples collected from beneath the slabs of several units detected PCE and TCE, however the detections were well below DEQ's current RBCs for residential vapor intrusion. Air samples collected from several units at different times sometimes had PCE and TCE detections. One TCE detection (2.3 $\mu g/m^3$) exceeded the current DEQ RBC (0.48 $\mu g/m^3$). The second air sample from the same location did not detect TCE. TCE was also detected in the ambient air (background) sample taken at the same time. Based on these data, DEQ had determined that vapor intrusion at the condos should not present an unacceptable risk based on DEQ's cleanup standards.

- Residences north of E. 40th Avenue. While DEQ had initial concerns regarding vapor intrusion in 2009 and 2010, and in 2011 required a vapor barrier be added in the crawlspace at 3990 Donald Street, further sampling has shown that vapor intrusion should not be a concern there. Crawlspace air samples collected from the duplex at the corner of Donald and E. 40th (315 and 345 E. 40th) did not detect TCE, but PCE was detected 1.2 $\mu g/m^3$ in the crawlspace samples. The concentrations were well below DEQ's current air RBCs. Thus, vapor intrusion should not be an ongoing concern at the properties north of E. 40th Ave.

Groundwater. On-site, there could be some areas that sometimes have PCE concentrations greater than the water-in-excavation RBC. Off-site, including beneath the Donald Street and E. 40th Ave. rights-of-way, while shallow groundwater remains contaminated, there should be no exceedances of DEQ's water in excavation RBCs. Trench/utility work in E. 40th Avenue, and to some extent Donald Street, will likely encounter this contamination, but at concentrations below DEQ's RBCs.

Ecological risk.
The site is fully developed commercial property and will likely remain that way. The site is almost completely paved and will likely remain that way, with small areas for landscaping. There is no shallow soil contamination at the site that can run off and impact surface water. There are

no water bodies nearby the site that could be impacted by the shallow groundwater contamination. Tugman Creek in Tugman Park is located over ¼ mile from the site and should not be adversely affected by the contamination.

5. RECOMMENDATION

Based on the soil cleanup and sampling done at the site to date, DEQ feels that, with proper conditions, the contamination remaining at the site should not present an unacceptable risk, in accordance with DEQ's cleanup standards. The contamination that has migrated off-site should also not present an unacceptable risk to residents in the affected areas. Therefore, DEQ is recommending a Conditional No Further Action (cNFA) for this site.

Conditions for Closure. DEQ is recommending the following conditions for site closure.

1. No residential use of the shopping center property without further investigation for vapor intrusion, vapor resistant construction, or both, and with prior approval from the DEQ.
2. A Contaminated Media Management Plan (CMMP) approved by the DEQ shall be prepared and followed. The CMMP should:
    a. Provide guidance on risk reduction and health and safety protocols for on-site trench workers who might encounter contaminated groundwater.
    b. Address potential groundwater contact in the E. 40th Ave. and Donald Street rights-of-way by city and other utility or construction workers. A copy of the CMMP will be provided to the City of Eugene.
    c. Describe how contaminated soil and groundwater be managed if removed from the ground in contaminated areas, both on and off-site.

These conditions would be included in an Easement and Equitable Servitudes (EES) signed by the owner and DEQ and recorded on the shopping center property. The CMMP should be included as an exhibit to the EES.

The No Further Action determination should be recorded in DEQ's ECSI database (ECSI # 4586).

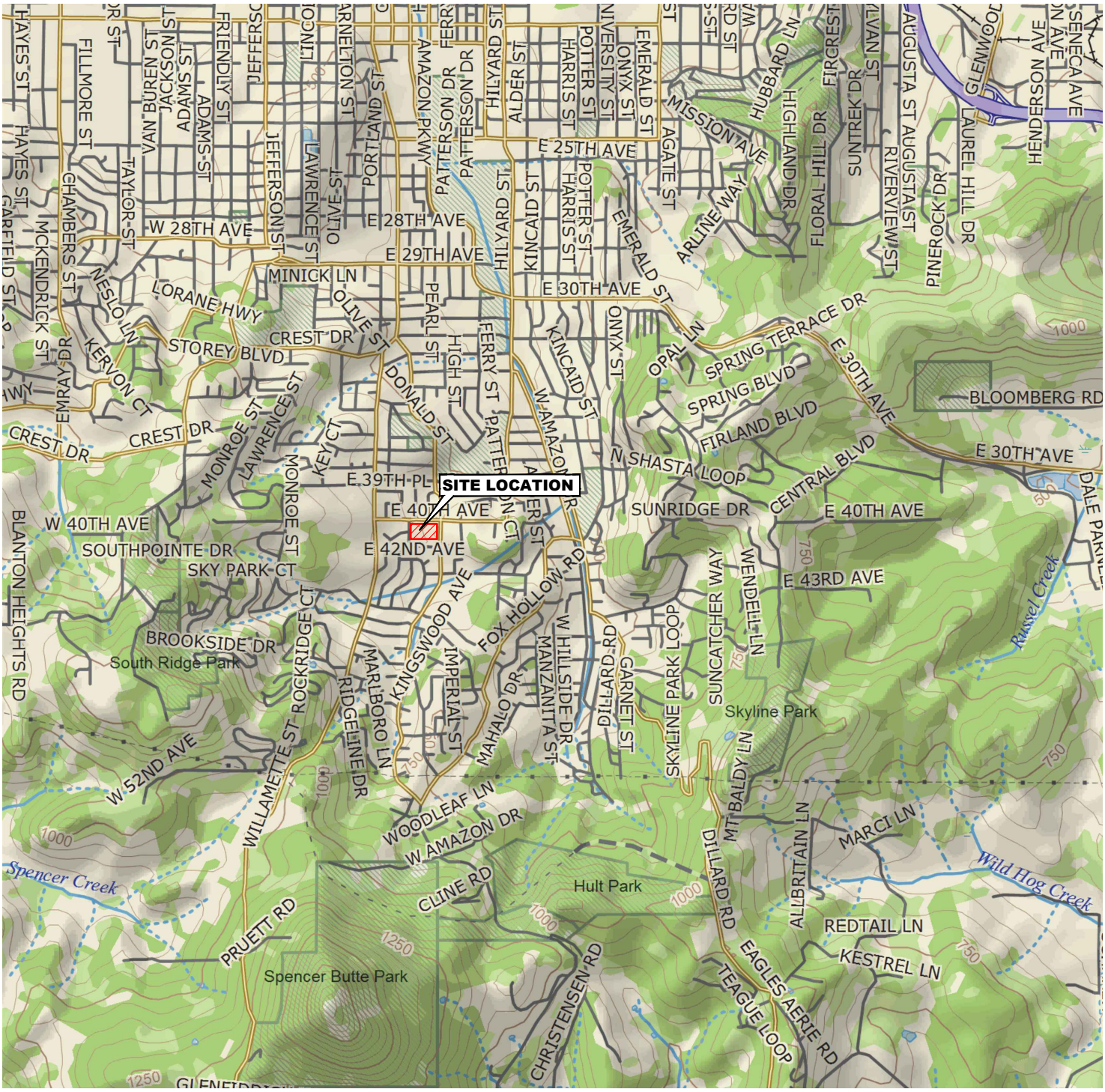
6. ADMINISTRATIVE RECORD

2023 Tech Memo-01-12-2023
2023 Independent Cleanup Pathway Report
2023 Contaminated Media Management Plan
2022 GW Mon Report
2022 1Q22-GW Monitoring Report
2021 Interim Removal Action Report
2020 Interim Removal Action-Workplan
2019 Feasibility Study
2019 Site Characterization Report
2011 VI Sampling Report
2010 April 2010-offsite indoor air Sampling Report

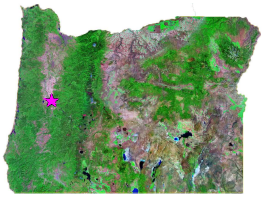
2010 VI-Summary Report
2010 Vapor Intrusion Mitigation Work-Plan
2010 Donald Street Eugene Vapor Barrier Installation
2009-August 2009 Add soil gas sampling Work Plan
2009-08-11-AdditionalSoilGasSamplingWorkPlan
2009 Vapor Intrusion Assessment Report
2009 Air Sampling Addendum
2008 Limited Subsurface Investigation

7. ATTACHMENTS

Figure 1 – Vicinity map
Figure 2 – Site Plan
Figure 3 – Onsite Soil Vapor Sampling
Figure 4a- Soil Vapor Sampling Results
Figure 4b -Indoor Air Sampling Results
Figure 5 – On Offsite Soil Vapor Sampling (south – E. 41st Ave)



North



OREGON

1/2 0 1

SCALE (MILES)

1000 0 1000 2000 3000 4000 5000

SCALE (FEET)

REFERENCE: USGS 7.5 MINUTE QUADRANGLE, EUGENE EAST, OREGON

Stantec

9400 SW BARNES ROAD, SUITE 200
PORTLAND, OREGON
PHONE (503) 297-1631/297-5429 (FAX)

FOR:
ROBERT BREEDEN
EDGEWOOD SHOPPING CENTER
350-390 E 40th AVENUE
EUGENE, OREGON

SITE LOCATION MAP

FIGURE: **1**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185750631	MDR	RM	PF	JAN 2019

FILEPATH:V:\1857\active\Secor\CADD_00 OTHER OFFICES\PORTLAND\BREEDEN BROS\FIG-1_SITE LOC-OREGON.dwg | Layout Tab: Layout1 | Drafter: MiRamirez | Jan 18, 2019 at 14:40

SUBSTATION (3990)

RESIDENTIAL DUPLEX (415) (425)

RESIDENTIAL (435) DUPLEX (445)

POWER LINES (UTILITY EASEMENT)

EAST 40th AVENUE

DONALD STREET

B-1

B-2

MW-6 533.58

B-3

534

FORMER GAS STATION BOUNDARY

536

SB-2

VACANT

ANIMAL CLINIC

WELL'S FARGO ATM

MW-3 537.99

538

0.027 ft/ft

SAFEWAY

MW-2 539.97

MW-1 539.62

540

MW-7 539.96

MW-4 540.55

B-4

B-5

B-6

B-7

VACANT

DENTIST

INSURANCE

WINE AND LIQUOR

BAGEL SHOP

FORMER DRY CLEANER

MUSIC MASTERS

BARBER

BEAUTY

HIGHLANDS PUB & SPORTS BAR

ALLEY

EDGEWOOD VILLA CONDOMINIUM (4023)

OFFICE

EDGEWOOD VILLA CONDOMINIUM (4083)

STORAGE

B-9

B-10

B-8

MW-5 (OW-1)

B-11

B-12

B-14

B-13

MW-5R 541.32

AREA OF INTERIM REMOVAL ACTION EXCAVATED TO 14-FEET BELOW GROUND SURFACE

WELL MW-5R REINSTALLED AFTER COMPLETION OF INTERIM REMOVAL ACTION

LEGEND:

- SITE BOUNDARY LINE
- MW- MONITORING WELL LOCATION
- MW-5 WELLS ABANDONED AUGUST 2020
- B-1 PREVIOUS SOIL BORINGS (2007 and 2008)
- B-1 PREVIOUS SOIL BORING (2018)
- *539.85* GROUNDWATER ELEVATION
- GROUNDWATER CONTOUR
- *0.007 ft/ft* GROUNDWATER FLOW DIRECTION AND HYDRAULIC GRADIENT (FT/FT)
- *NM* NOT MEASURED

N

0 60 120

APPROXIMATE SCALE IN FEET

Stantec

601 SW SECOND AVENUE
PORTLAND, OREGON
PHONE (503) 297-1631/297-5429 (FAX)

FOR: EDGEWOOD SHOPPING CENTER
350-390 E 40th AVENUE
EUGENE, OREGON

SITE PLAN WITH SEPTEMBER 2022 GROUNDWATER ELEVATION CONTOURS

FIGURE: **2**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185750631	MDR/JBL	BM	P. VAUGHAN	MAR 2022

FILEPATH:V:\1858\miscellaneous\secor\CADD\00_OTHER OFFICES\Portland, OR\BREEDEN BROS\2022\FIG-2 EDGEWOOD-3Q-2022.dwg | Layout Tab: FIG-3 GW | Drafter: JLieberman | Oct 06, 2022 at 12:47

IA-5	
TCE	<0.18
PCE	<0.22

IA-1	
TCE	<0.18
PCE	**1.3**

IA-1DUP	
TCE	<0.18
PCE	**1.3**

SS-3	
TCE	<5.8
PCE	**250**

AA	
TCE	<0.23
PCE	<0.29

SS-1	
TCE	**8.1**
PCE	**350**

IA-6	
TCE	<0.20
PCE	**0.52**

IA-7	
TCE	<0.23
PCE	**9.6**

IA-2	
TCE	<0.18
PCE	**0.44**

IA-3	
TCE	**0.76**
PCE	<0.24

IA-4	
TCE	<0.19
PCE	<0.24

SS-6	
TCE	<5.8
PCE	**100**

SS-7	
TCE	<6.0
PCE	**9.0**

SS-5	
TCE	<5.9
PCE	<7.5

SS-2	
TCE	**12**
PCE	**360**

SS-2 DUP	
TCE	<46
PCE	**400**

SS-4	
TCE	<23
PCE	**9,300**

SV-1	
TCE	<5.7
PCE	**790**

SV-2	
TCE	270
PCE	**79,000**

SV-2 Dup	
TCE	<460
PCE	**88,000**

RPS HOLDINGS/ WELLSCAPE
EXIT BALCONY
RPS
RPS
VACANT
ADVANCED COMPUTER TECHNICAL IES
VACANT
VACANT
BREEDEN
EDWARD JONES
EXIT CORRIDOR
DR. PHILLIP GISSELL
WOMEN
MEN
DR. PHILLIP GISSELL
ELEVATOR
IA-5
2nd FLOOR

MW-3
IA-1
IA-1DUP
SS-3
ANIMAL CLINIC (SEE FIGURE 3)
WELLS FARGO ATM
USPS MAILBOX
MW-1
MW-2
SAFEWAY
MW-4
DENTIST
ONLY THE BEST TRUCK BROKER
INSURANCE
TAX
DELI
TAQUERIA
VACANT - FORMER SIEGMUND'S DRY CLEANERS
CHASE
FLOWERS & GIFTS
BARBER
BEAUTY
RESTAURANT
IA-4
SS-6
IA-3
SS-7
IA-6
SS-5
SS-1
IA-7
SS-2
SS-2 DUP
IA-2
SS-4
SLAB #3 (~1' LOWER THAN SLAB #2)
SLAB #2 (~2' LOWER THAN SLAB #1)
SLAB #1
ALLEY
MW-5
GREEN BOX
Soil Vapor 1
Soil Vapor 2
Soil Vapor 2 Dup

LEGEND:

- GROUNDWATER MONITORING WELL
- SUB-SLAB SAMPLE
- INDOOR AIR SAMPLE
- AMBIENT AIR SAMPLE
- OUTLINE OF 2nd FLOOR

ANALYTES

TCE	TRICHLOROETHENE
PCE	TETRACHLOROETHENE

0 30 60
APPROXIMATE SCALE IN FEET
N

Stantec
7730 SW MOHAWK STREET
TUALATIN, OREGON 97062
PHONE: (503) 691-2030/692-7074 (FAX)

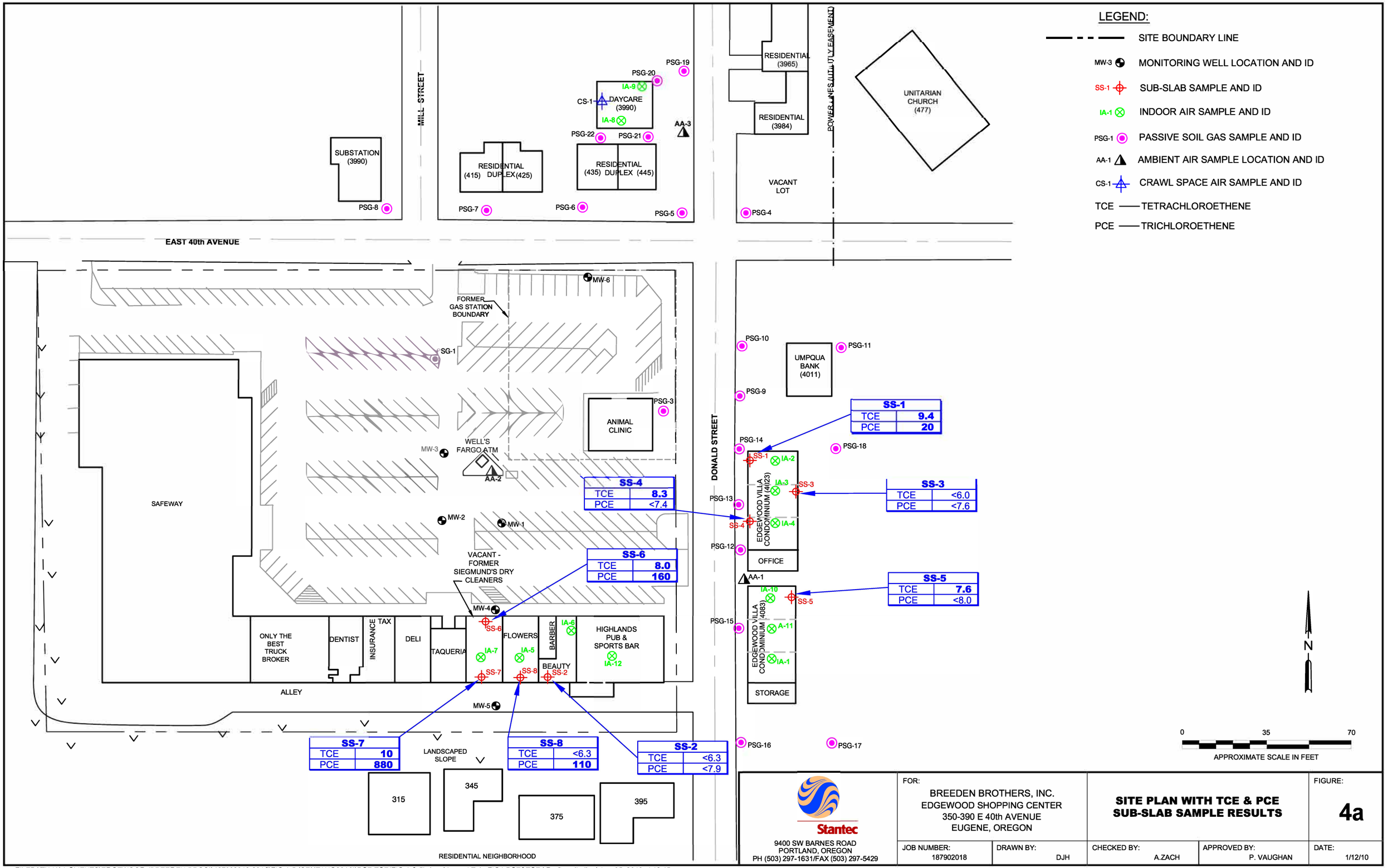
FOR:
BREEDEN BROTHERS, INC.
EDGEWOOD SHOPPING CENTER
350-390 E 40th AVENUE
EUGENE, OREGON

SUB-SLAB AND INDOOR AIR SAMPLE LOCATIONS EDGEWOOD SHOPPING CENTER

FIGURE: 3

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
187902018	DJH/ARA	A.ZACH	P. VAUGHAN	5/21/09

FILEPATH:K:\2-JOB NUMBERS\15OT\90402\187902018-2009\REVISED 15OT.90402.00 - SITE-509.dwg|dheller|Jul 17, 2009 at 14:09|Layout: FIG.2 INDOOR AIR-L BLDG



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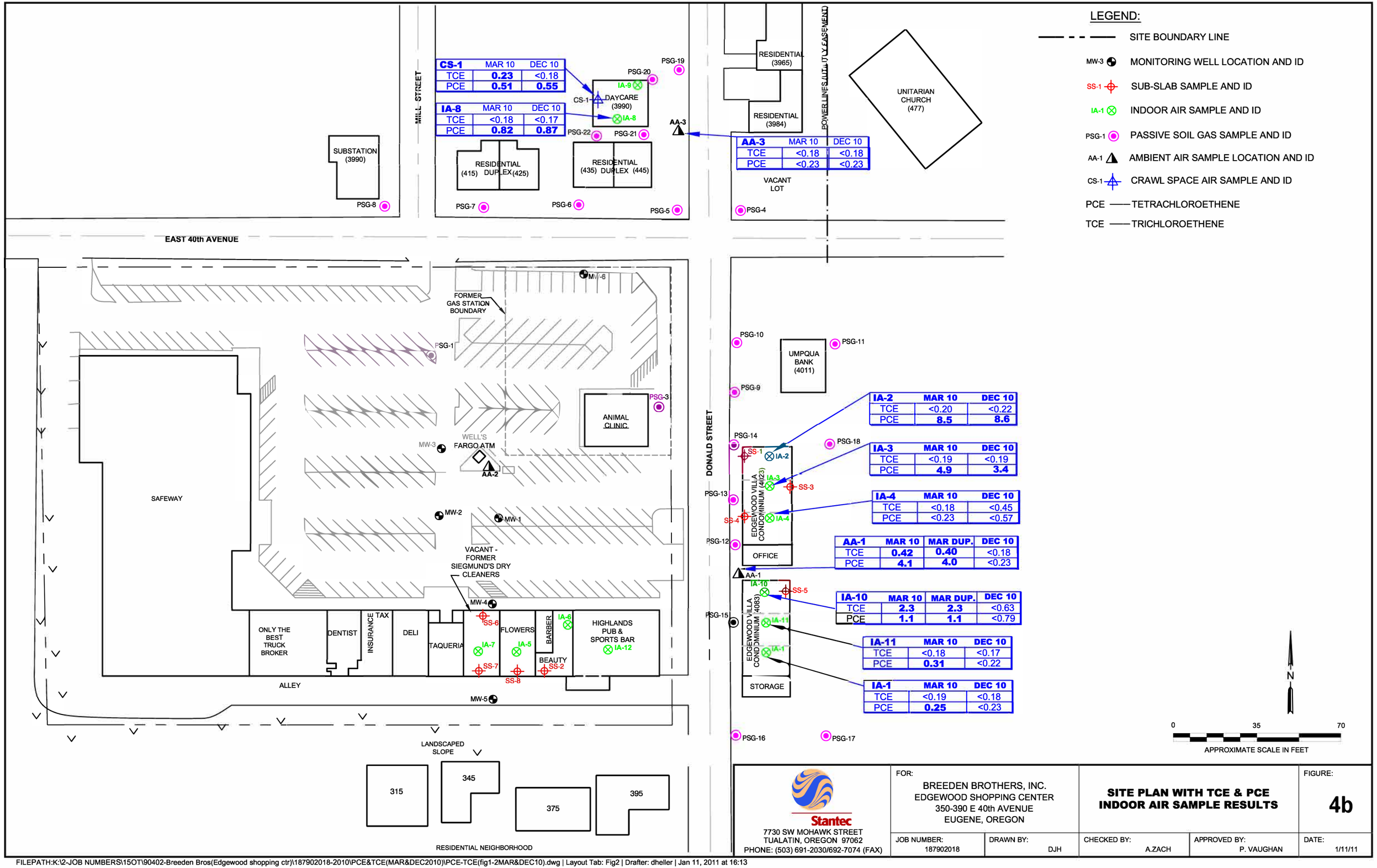
350-390 E 40th AVENUE
EUGENE, OREGON

SITE PLAN WITH TCE & PCE SUB-SLAB SAMPLE RESULTS

FIGURE: **4a**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
187902018	DJH	A.ZACH	P. VAUGHAN	1/12/10

FILEPATH:K:\1-CLIENTS\EDGEWOOD (BREEDEN BROS)\187902018-2010\FIG.1-5 (SENTAUG2010)\PCE-TCE(FIG.4 & 5).dwg | Layout Tab: FIG4-PCE&TCE | Drafter: dheller | Aug 05, 2010 at 16:45



Stantec 7730 SW MOHAWK STREET TUALATIN, OREGON 97062 PHONE: (503) 691-2030/692-7074 (FAX)	FOR: BREEDEN BROTHERS, INC. EDGEWOOD SHOPPING CENTER 350-390 E 40th AVENUE EUGENE, OREGON	**SITE PLAN WITH TCE & PCE INDOOR AIR SAMPLE RESULTS**	FIGURE: **4b**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
187902018	DJH	A.ZACH	P. VAUGHAN	1/11/11

FILEPATH:K:\2-JOB NUMBERS\15OT\90402-Breeden Bros(Edgewood shopping ctr)\187902018-2010\PCE&TCE(MAR&DEC2010)\PCE-TCE(fig1-2MAR&DEC10).dwg | Layout Tab: Fig2 | Drafter: dheller | Jan 11, 2011 at 16:13

EAST 40th AVENUE

PCE =20 µg/M³
SV-1

SV-2
ND

MW-6
SV-3
PCE =720 µg/M³

SV-4
PCE =53 µg/M³

FORMER GAS STATION BOUNDARY

PCE =8.9 µg/M³
SV-5

SAFEWAY

ANIMAL CLINIC

WELL'S FARGO ATM

MW-3

AMBIENT AIR SAMPLE

SV-6
PCE = ND

MW-2

MW-1

VACANT - FORMER SIEGMUND'S DRY CLEANERS

SV-7
PCE =670 µg/M³

MW-4

DENTIST

ONLY THE BEST TRUCK BROKER

TAX

INSURANCE

DELI

TAQUERIA

FLOWERS

BARBER

BEAUTY SHOP

HIGHLANDS PUB & SPORTS BAR

ALLEY

BTM-2

MW-5

BTM-1

GREEN BOX WELL

STP-1

STP-2

STOCKPILE

SDW-3

SDW-2

SDW-1

PCE =8.4 µg/M³

LANDSCAPED SLOPE

SV-10

SV-9

SV-8
PCE =39 µg/M³

315

345

375

RESIDENTIAL NEIGHBORHOOD

DONALD STREET

UMPQUA BANK

APARTMENTS

APARTMENTS

LEGEND:

- SITE BOUNDARY LINE
- MW-3 — MONITORING WELL LOCATION
- SV-1 — SOIL GAS SAMPLE LOCATION
- STP-1 — STOCKPILE SAMPLE LOCATION
- BTM-1 — BOTTOM OF EXCAVATION SAMPLE LOCATION (9-16-09)
- SDW-1 — SIDEWALL SAMPLE FROM EXCAVATION (9-16-09)
- AMBIENT AIR SAMPLE LOCATION (9-16-09)
- ND — NOT DETECTED
- THEORETICAL AND MEASURED PCE IN SOIL GAS

N

0 50 100

APPROXIMATE SCALE IN FEET

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FOR:
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EDGEWOOD SHOPPING CENTER
350-390 E 40th AVENUE
EUGENE, OREGON

PCE SOIL GAS RESULTS (SEPTEMBER 10, 2009)

FIGURE: **5**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
187902018	DJH	A.ZACH	P. VAUGHAN	10/1/09

FILEPATH:K:\1-CLIENTS\EDGEWOOD (BREEDEN BROS)\187902018-2010\FIG.1-5 (SENTAUG2010)\SP & SAMPLE LOC(fig2-).dwg | Layout Tab: FIG.2 909 SITE (PCE) | Drafter: dheller | Aug 05, 2010 at 16:38