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February 20, 2019

Mark Conan
Plaid Pantries Inc.
10025 SW Allen Blvd
Beaverton, OR 97005

Re: Opinion on Remedial Investigation and proposed work at the following Site:

- **Site Name:** Plaid Pantry 112
- **Site Address:** 1002 W Fourth Plain Blvd., Vancouver, Clark County, WA 98660
- **Facility/Site No.:** 9158935
- **Cleanup Site No.:** 11759
- **VCP Project No.:** SW1314

Dear Mark Conan:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Plaid Pantry 112 facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act[1] (MTCA), chapter 70.105D RCW.[2]

This letter establishes Ecology's assessment of your Site at the time of this review given the information presented and available. This opinion should not prevent you from moving forward with your planned cleanup or sampling activities, but is intended to help focus those activities, close data gaps, and achieve cleanup at your Site.

Issue Presented and Opinion

Ecology is responding to your request to evaluate your *Remedial Investigation Repor*t and Focused Off-Site Remedial Technology Evaluation.

[1] Toxic Cleanup Program's Policy & Technical Support Unit, Model Toxics Control Act Regulation and Statute: MTCA Cleanup Regulation Chapter 173-340 WAC, Model Toxics Control Act Chapter 70.105D RCW, Uniform Environmental Covenants Act Chapter 64.70 RCW, Publication No. 94-06, Revised November 2013. https://fortress.wa.gov/ecy/publications/SummaryPages/9406.html
[2] https://app.leg.wa.gov/RCW/default.aspx?cite=70.105D

Ecology supports your proposal to expand the existing Soil Vapor Extraction System (SVE) to address remaining gasoline impacts in the adjacent right-of-way. While this opinion contains details about how to continue to meet the substantive requirements of MTCA, nothing in this opinion is intended to prevent you from immediately addressing remaining petroleum contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, chapter 70.105D RCW,[2] and its implementing regulations, Washington Administrative Code (WAC) chapter 173-340[3] (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- Gasoline range total petroleum hydrocarbons (TPH-G) into the Soil.
- Diesel range petroleum hydrocarbons (TPH-D) into the Soil.
- Benzene, toluene, ethylbenzene, and xylene (BTEX) constituents into the Soil.
- Lead into the Soil.
- Naphthalene into the Soil.
- Tetrachloroethene (PCE) into the soil vapor.
- Freon into the soil vapor.

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology. A parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

[3] https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. EES Environmental Consulting, Inc. (EES), *Remedial Investigation Report*, September 19, 2018.
2. EES, *Technical Memorandum; Focused Off-Site Remedial Technology Evaluation*, September 19, 2018.
3. EES, *Technical Memorandum; Vapor Intrusion Assessment Data Table Revisions*, August 5, 2017.
4. EES, *Technical Memorandum; Vapor Intrusion Assessment*, May 18, 2017.
5. EES, *Technical Memorandum; Subject: Soil Vapor Extraction Monitoring Results*, June 14, 2016.
6. EES, *Technical Memorandum; Subject: Development of Site-Specific MTCA Method B Soil Cleanup Level for Gasoline*, March 31, 2016.
7. EES, *Technical Memorandum; Subject: Perched Groundwater Evaluation*, March 30, 2016.
8. EES, *Interim Remedial Action Status Report*, February 3 2014.
9. Ecology, *Letter to Mr. Mark Conan; Re: Further Action at the following Site:*, October 28, 2013.
10. EES, *Site Assessment Report*, December 31, 2012.
11. EES, *Site Assessment Report*, December 27, 2012.
12. PNG Environmental, Inc. (PNG), *Site Assessment Report*, October 19, 2011.
13. PNG, *Memorandum; Subject: Historic Information Review Summary*, July 29, 2011.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. Information on obtaining those records can be found on Ecology's public records requests web page.[6] Some site documents may be available on Ecology's Cleanup Site Search web page.[7]

[6] https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests
[7] https://fortress.wa.gov/ecy/gsp/SiteSearchPage.aspx

Analysis of the Cleanup

Ecology has concluded that **further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

EES submitted a Remedial Investigation Report (the Report), that demonstrates the delineation of hazardous substances in all media for the Site. Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. However, Ecology is concerned that your implementation of the calculated Method B soil cleanup level (CUL) for total petroleum hydrocarbons (TPH) may be incorrect.

The Site is described above and in **Enclosure A**. EES's Figure 3 and Figure 6 are included in **Enclosure A** for reference. Any other Figures or Tables referenced below can be found in the Report unless indicated otherwise.

Ecology understands that Plaid Pantry only intends to remediate the petroleum contamination related to underground petroleum storage and fuel dispensing at the Site and not the PCE (EES; Table 4), Freon,[8] or other contamination that may also be present at the Site and not related to the petroleum release.

The exposure pathways for the Site as Ecology currently understands them are detailed below. When possible, the pathways have been separated into petroleum contamination and halogenated solvents and Freon contamination.

Soil-Direct Contact: Complete. Hazardous substances related to the petroleum release from a previously unknown underground storage tank (UST) are present in the soil between the ground surface and 15 feet below ground surface (bgs) (EES; Table 1). There is also the potential of PCE and Freon contamination at the Site, and the source of this contamination has not been determined.

Soil-Leaching: Incomplete for petroleum. Hazardous substances are only present in the shallow soils, less than 15 feet bgs (EES; Figure 5), and groundwater has not been encountered down to 40 feet bgs, the maximum depth explored at the Site. Based on logs for the area, EES is assuming that groundwater is present at depths greater than 80 feet bgs.

Potentially complete for halogenated solvents and refrigerants. PCE has been observed in soil gas samples for the Site (EES; Table 4 and Table 5). The source of the PCE has not been determined. Freon was indicated as causing matrix interference for some soil gas samples. The source of the Freon has not been determined.

[8] EES, *Technical Memorandum; Vapor Intrusion Assessment Data Table Revisions*, August 5, 2017, p. 1.

Soil-Vapor: Incomplete for petroleum. Petroleum contaminated soil (PCS) is located outside the horizontal and vertical inclusion distances of 6 feet vertically below structures and 30 feet horizontally from structures (EES; Figure 4A and Figure 5). Sub-slab soil gas samples collected below both the Plaid Pantry and Domino's Pizza areas of the building did not show any exceedances of the MTCA Method B sub-slab screening levels.

Potentially complete for halogenated solvents and refrigerants. The source of the PCE observed in some soil gas samples has not been determined and therefore the vapor intrusion pathway cannot be ruled out. Freon was noted as causing matrix interference for some soil gas samples. However, Freon concentrations have not been reported and the source of the Freon has not been determined. Both a dry cleaner and an automotive repair facility have been reported as operating on this Property in the past.

Groundwater: Incomplete for petroleum. Groundwater has not been observed at the Site down to a depth of 40 feet bgs and is believed to only be present at depths greater than 80 feet bgs.

Potentially complete for halogenated solvents and refrigerants. PCS and Freon have been detected in soil vapor sampling conducted at the Site. Because these are dense non-aqueous phase liquids, it may not be possible to rule out groundwater contamination based on separation distance.

Ecological: Potentially Complete. EES submitted a Terrestrial Ecological Evaluation (TEE) with the Report. Ecology is unable to fully assess the TEE at this time since no supporting documentation was submitted to support the claims made in the TEE.

Based on a review of the available information, Ecology has the following comments;

1. The Method B soil CUL for TPH that you calculated in the March 2016 report is a total TPH CUL and should be applied to the sum of NWTPH-Gx and NWTPH-Dx results. Although it was established that the TPH-D identified in TPH HCID analysis is from the TPH-G contamination, it has not been shown that NWTPH-Gx analysis alone is capturing all the contamination that makes up the TPH-G contamination, specifically when the NWTPH-Dx result is greater than the NWTPH-Gx result.

   Either NWTPH-Dx needs to be analyzed in addition to NWTPH-Gx and the results combined for direct comparison to the Method B soil CUL for TPH, or it will need to be demonstrated that NWTPH-Gx analysis alone captures all the petroleum hydrocarbon contamination present at the Site, and that including the NWTPH-Dx would be 'double counting' those carbon ranges.

2. It is stated in the Report[9] that "The observed lead concentrations (2.4 to 24 milligrams/Kilograms [mg/Kg]) are consistent with published data for naturally occurring background lead in Clark County, Washington (Ecology 1994)".[10] Ecology believes using the established background concentrations as the CUL for lead in soil is appropriate for this Site.

   The established background concentrations for lead in both Clark County and the State is 17 mg/Kg. Either the state background 95 Upper Confidence Limit (UCL) concentration or the appropriate region specific 95 UCL concentration can be used as the Site CUL. Background concentrations from regions not associated with a Site are not appropriate for use as CULs.

3. Although naphthalene is considered part of the TPH-G contamination[11] for Method A cleanups, it will need to be analyzed as an individual hazardous substances for your proposed Method B clean up (WAC 173-340-900).[13]

4. Ecology concurs that the soil-vapor pathway in regards to petroleum vapor intrusion (PVI) is likely not a complete pathway at this Site given the reasons below.

   - The horizontal and vertical separation distances of the Sites PCS from the on Site building.
   - Sub-slab soil gas samples that are less than the MTCA Method B sub-slab soil gas screening levels.
   - Indoor air samples appear to more closely resemble outdoor air samples than sub-slab soil gas samples.

   This does not pertain to non-petroleum related contamination at the site. This pathway should be reevaluated if any new information is gathered that could potentially make this pathway complete.

5. Although the information provided does not indicate a short-term trichloroethylene (TCE) risk for this Site, when additional sampling is performed at the Site, particularly for halogenated solvents, TCE analytical results should be assessed against the short-term TCE toxicity.[14, 15, 16]

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[9] EES Environmental Consulting, Inc. (EES), *Remedial Investigation Report*, September 19, 2018, p. 12.
[10] Ecology Toxics Cleanup Program, Natural Background Soil Metals Concentrations in Washington State, Publication No. 94-115, October, 1994.
[11] EES Environmental Consulting, Inc. (EES), *Remedial Investigation Report*, September 19, 2018, p. 13.
[13] MTCA, Table 830-1, Footnote (14)(b).
[14] Ecology, *DRAFT Vapor Intrusion (VI) Investigations and Short-term Trichloroethylene (TCE) Toxicity; Implementation Memorandum No. 22*, Publication No. 18-09-047, Draft for Public Comment November 2018.
[15] EPA, Region 9, *MEMORANDUM; Subject: EPA Region 9 Response Action Levels and Recommendations to address Near-Term Inhalation Exposures to TCE in Air from Subsurface Vapor Intrusion*, July 9, 2014.
[16] EPA, Region 10, *MEMORANDUM; Subject: OEA Recommendations Regarding Trichloroethylene Toxicity in Human Health Risk Assessments*, December 13, 2012.

6. Closure of the soil-direct contact pathway by utilizing the already existing pavement to prevent contact[17] will require the use of an Environmental Covenant to protect that covering.

7. Ecology recommends resubmitting the TEE for the Site with supporting documentation. Specifically;

    - A map demonstrating the estimated area of contiguous undeveloped land on the Site or within 500 feet of the any area of the Site. This should take into account of the full extent of contamination in soil, and not just a centrally located point.

    - County parcel information showing the industrial or commercial status of the Site.

    - Proof that the habitat quality and the likelihood of undeveloped land to attract wildlife have been determined by an experienced field biologist.

8. Two confirmation samples (B-19, and B-20) have been collected that appear to demonstrate that the SVE system that has been operating on the Site since August 2012 has potentially reduced the contamination present in the sub surface soils in a relatively short time frame (EES; Table 1). Samples B-19 and B-20 were collected after three years of SVE operation and show greatly reduced contamination levels when compared to the nearest soil samples (SVE-2 and SVE-3) that were collected prior to implementation of the SVE system.

    The extension of the SVE system that EES proposed in the September 2018, *Technical Memorandum; Focused Off-Site Remedial Technology Evaluation*, is an appropriate next step for the Site in attempting to remove the hazardous substances present in the West Fourth Plain Blvd. corridor, and has potential to meet the cleanup standards for the Site.

    Failure of the proposed cleanup option to meet the cleanup standards for the Site will require additional effort to achieve those standards or the Site may need to seek closure by other means.

[17] Report, p. 19.

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA. Site CULs as Ecology currently understands them are given in the table at the end of this section.

Standards points of compliance listed below are currently being used for the Site. Ecology believes that standard points of compliance are applicable for this Site.

- The point of compliance for protection of groundwater is established in the soils throughout the Site (WAC 173-340-740(6)(b)).[3]
- For soil cleanup levels based on protection from vapors, the point of compliance shall be established in the soils throughout the site from the ground surface to the uppermost ground water saturated zone (WAC 173-340-740(6)(c)).[3]
- For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance is established in the soils throughout the Site from the ground surface to 15 feet below ground surface (WAC 173-340-740(6)(d)).[3]
- The point of compliance for the groundwater is established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest depth that could potentially be affected by the Site (WAC 173-340-720(8)(b)).[3]
- The point of compliance for indoor air is ambient and indoor air throughout the Site (WAC 173-340-750(6)).[3]

Ecology Table 1 – Proposed Site CULs or Screening Levels for Each Media

Constituent of Concern	CAS #	Method A Groundwater CUL (µg/L)	Method B Soil CUL (mg/Kg)	Method B Indoor Air Screening Levels (µg/m^3)
Gasoline & Diesel Related Hazardous Substances:				
TPH		None	2,619[18]	140
Benzene	71-43-2	5	18.2	0.32
Toluene	108-88-3	1,000	6,400	2,285.71
Ethylbenzene	100-41-4	700	8,000	457.14
Xylene	1330-20-7	1,000	16,000	45.71 [19]
Naphthalenes[20]	Various	160	1,600	0.07
Additives:				
EDB	106-93-4	0.01	0.5	0.0042
EDC	107-06-2	5	10.99	0.01
MTBE	1634-04-4	20	555.56	9.62
Metals:				
Total Lead	7439-92-1	15	17 [21]	NONE
Halogenated VOCs:				
PCE	127-18-4	5.0	476.19	9.62
TCE[22]	79-01-6	5.0	12	0.37
1,2-Dichloroethylene[22]	Isomer Dependent	NONE	Isomer Dependent	NONE
Vinyl Chloride[22]	75-01-4	0.20	240	45.7
VOCs:				
Carbon tetrachloride	56-23-5	NONE	14.3	0.417
MEK	78-93-3	NONE	48,000	2,290
1,1,1-Trichloroethane	71-55-6	200	160,000	2,290

[18] EES, *Technical Memorandum; Subject: Development of Site-Specific MTCA Method B Soil Cleanup Level for Gasoline*, March 31, 2016.
[19] For both m-Xylene and o-Xylene.
[20] Naphthalenes includes the total of naphthalene, 1-methyhl naphthalene, and 2-methyl naphthalene.
[21] Washing State and Clark County Background Lead Concentration.
[22] Included as Degradation Daughter Products of PCE.

Ecology Table 2 – MTCA Method B VI Screening Levels

Constituent of Concern	CAS #	Method B Sub-Slab Soil Gas Screening Level ($\mu g/m^3$)	Method B Deep Soil Screening Level ($\mu g/m^3$)	Method B Groundwater Screening Level ($\mu g/L$)
Gasoline & Diesel Related Hazardous Substances:				
TPH	NONE	4,700	14,000	140,000
Benzene	71-43-2	10.68	32.05	2.40
Toluene	108-88-3	76,190.48	228,571.43	15,584.42
Ethylbenzene	100-41-4	15,238.10	45,714.29	2,782.61
m-Xylene	108-38-3	1,523.81	4,571.43	310
o-Xylene	95-47-6	1,523.81	4,571.43	440
Naphthalene	91-20-3	2.45	7.35	8.93
Additives:				
EDB	106-93-4	0.14	0.42	0.28
EDC	107-06-2	3.21	9.62	4.20
MTBE	1634-04-4	320.51	961.54	610
Halogenated VOCs:				
PCE	127-18-4	320.51	962	22.9
TCE[22]	79-01-6	12.33	37	1.55
1,2-Dichloroethylene[22]	Isomer Dependent	NONE	NONE	NONE
Vinyl Chloride[22]	75-01-4	9.33	28	0.347
VOCs:				
Carbon Tetrachloride	56-23-5	13.89	41.7	0.539
MEK	78-93-3	76,190.48	228,571.43	1,740,000
1,1,1-Trichloroethane	71-55-6	76,190.48	228,571.43	5,240

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site may meet the substantive requirements of MTCA. Cleanup at the Site has not been completed, and Site wide confirmation samples that demonstrate the remediation of all of the Sites hazardous substances will need to be completed to demonstrate the effectiveness of the remediation.

4. Cleanup.

Ecology has determined the cleanup you performed does not meet any cleanup standards at the Site. Cleanup has not been completed. The cleanup actions performed at the Site at this time has been removal of a historical UST with limited removal of PCS and the installation of an SVE system that has been in operation since August 2012. Extension of the SVE system has been proposed to attempt remediation of PCS that extends into the Fourth Plain Blvd. corridor.

Limitations of the Opinion

1. **Opinion does not settle liability with the state.**

   Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

   - Resolve or alter a person's liability to the state.
   - Protect liable persons from contribution claims by third parties.

   To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).[2]

2. **Opinion does not constitute a determination of substantial equivalence.**

   To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination.
   See RCW 70.105D.080[3] and WAC 173-340-545.[2]

3. **State is immune from liability.**

   The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion.
   See RCW 70.105D.030(1)(i).[2]

Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our Voluntary Cleanup Program web site.[23] If you have any questions about this opinion, please contact me by phone at (360) 407-6437 or at aaren.fiedler@ecy.wa.gov.

Sincerely,

Aaren Fiedler
Southwest Regional Office
Toxics Cleanup Program

AF: tm

Enclosures: A – Description, Diagrams, and Tables of the Site

By certified mail: 9489 0090 0027 6066 5562 59

cc: Richard Piacentini, 1002 West Fourth Plain Blvd LLC
Paul Ecker, EES Environmental consulting, Inc.
Nicholas Acklam, Ecology
Ecology Site File

[23] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Cleanup-process/Cleanup-options/Voluntary-cleanup-program

Enclosure A

Description, Diagrams, and Tables of the Site

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Site Description

The Site, identified as Plaid Pantry 112, is located at 1002 W Fourth Plain Blvd., Vancouver, 98660, Clark County (Parcel ID 1018000). The Site is located at the north-west corner of the intersection of W Fourth Plain Blvd. and Kauffman Ave. The area around the Site is mostly commercial.

The Site property consists of a commercial building occupied by the Plaid Pantry convenience store and a Domino's Pizza. Plaid Pantry operates a 76 branded fuel dispenser located in the parking lot area of the Site along W Fourth Plain Blvd.

East of the Site across Kauffman Ave. is a shopping center with a kiosk style coffee shop. South-east of the Site across the intersection is a credit union. South of the Site across W Fourth Plain Blvd. is a tire repair shop and some private residences.

Adjacent to the Site Property on the west is a vacant lot and adjacent to the Site Property on the north is a brick manufacturing facility.

The source of the release was an UST believed to have been left in place from historical (before Plaid Pantry) refueling operations that were conducted in the area. This UST has been removed. The hazardous substances released at the Site are petroleum (gasoline) related hazardous substances.

Contamination extends vertically down to a depth of approximately 12 feet below ground surface (bgs). Contamination extends horizontally north-south from just north of the current dispenser island to approximately 15 feet out into the W Fourth Plain Blvd. corridor south of the Site Property, and east-west from the southwestern end of the current UST nest to approximately 30 feet west of the current UST nest. Only soil and soil gas are affected.

Groundwater at the Site is believed to be at a depth of 80 feet or more, and no groundwater has been encountered down to the deepest depth explored at approximately 40 feet bgs.

Geology: EES reports that the Site is comprised primarily of silt and sandy silt grading to silty sand down to depths ranging from 13.5 feet to 20 feet bgs. This silt is covered by a surface fill. Below this silty layer is a layer of sand and gravel down to the maximum depth explored (approximately 40 feet bgs).

Since groundwater has not been encountered at the Site, EES is only assuming that the flow direction in the area is to the west or southwest based on topography and the location of the Columbia River. The Columbia River is located approximately 1 mile southwest of the Site.

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Site History

Early Site Use: As reported by PNG, the property appears to have been first developed in 1951 with a commercial building that existed through 1978. The current commercial building appears to have been constructed in 1984. Businesses that have been reported as operating at the Site are; a Barber Shop (~1958), an Automotive Repair and Service Station (~1954-1970), a Dairy (~1962-1965), a Dry Cleaners (~1967), a Wood Furniture Refinisher (~1971), Thrift/re-sale Store, and an Automotive Upholstery facility (1971-1977). The Domino's Pizza that currently occupies the building with Plaid Pantry was initially listed for the property in 2000. The Plaid Pantry convenience store and retail gasoline station were constructed 1982 and opened in 1983.

Initial Site Assessment (September 2011): PNG conducted a Site assessment in 2011 that was equivalent to a Phase I/II Environmental Site Assessment (PI/PII). PNG conducted a records review and developed a general site operational history, and had a geophysical survey completed by Pacific Geophysics.

PNG also advanced six borings across the Site for the purposes of groundwater and soil sampling. The geophysical survey did not show the existence of an UST or a backfilled former UST nest other than that which is known to be the current UST and dispenser system. Of the six borings, only two showed detectible concentrations of constituents of concern (COCs), B2 and B5. Boring B2 had TPH-O present (54 mg/Kg) below the MTCA Method A CUL at a depth of nine feet bgs. Boring B5 showed TPH-G, and BTEX constituents in excess of the Method A CULs at multiple depths.

The maximum vertical extent of the contamination was not defined. Boring B5 is south of the current dispenser islands between the dispensers island and Fourth Plain Blvd. All other analytes were below the laboratory detection limits. All borings were completed to a depth of 40 feet bgs, and no groundwater was encountered in any of the borings.

Source Discovery (February 2012): During UST system upgrades in February 2012, a previously unknown UST (approximately 1,000 gallon capacity) was discovered south of the current dispenser island location. The tank was empty except for residual water and sludge. Analysis of the tank contents indicated the presence of gasoline-range organics.

The tank was removed and corrosion and pitting were noted on the tank. Visible contamination was noted in the surrounding soils, and the pit was over excavated and sampled. Samples collected from the south, west, east, and floor of the excavation had exceedances of the MTCA Method A CULs for TPH-G, and BTEX constituents. The north wall samples did not show any exceedances. Groundwater was not encountered during the excavation activities.

Site Assessment and Interim Remedial Action (August 2012): In August 2012, additional boring and soils sampling was conducted at the Site, and a soil vapor extraction (SVE) system was installed as in interim remedial action. With the soil samples collected from the soil borings and SVE wells, the vertical and horizontal extent of the contamination is defined.

Contamination was shown to extend into the roadway (W Fourth Plain Blvd.) in excess of Method A CULs (Boring B-11) and extend underneath the current dispenser system. Contamination may also encroach on the current UST nest. Groundwater was not encountered in any of the borings.

Soil vapor sampling was conducted on borings S-1 through S-13 and SVE-4 to determine the best locations for the SVE system wells. Soil gas results from these sampling locations showed BTEX constituents across the site, both above and below the MTCA Method B screening levels. Additionally, constituents not expected to be associated with a gas station operation were also present in the soil gas results. Tetrachloroethene (PCE), trichloroethylene (TCE), 2-butanone (MEK), carbon tetrachloride, and 1,1,1-tetrachloroethene, were present in the soil gas samples.

Remedial Investigation and additional cleanup activities (September 2018): The SVE system has been in operation since August 2012 with a brief suspension of activities between November 2015 and February 2016 when the system took on water. In September of 2015, two on-Property soil samples were collected to assess the efficacy of the system and samples were also collected to help define the Site. Only TPH-G and BTEX were analyzed.

The two SVE system performance evaluation samples (B-19 and B-20) show a reduction of TPH-G of 6,800 mg/Kg for boring SVE-2 at 8 feet bgs to approximately 8 mg/Kg in B-19 in the 6 to 9 feet bgs interval, and a reduction of 3,820 mg/Kg for boring SVE-3 at 8 feet bgs to a concentration of 475 mg/Kg in B-20 in the 6 to 9 feet bgs interval.

With additional off Site soil samples, the extents of PCS in the West Fourth Plain Blvd. corridor have been sufficiently defined. EES intends to extend the SVE system out into the West Fourth Plain Blvd. corridor to reduce the contamination present in that area to below the CULs established for the Site.

Site Diagrams

December 12, 2018

Ecology Figure 1: Site Location and Parcel Map

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap

DEPARTMENT OF ECOLOGY
State of Washington

LEGEND

- Property Boundary
- Direct–Push Boring (Sept 2011)
- Direct–Push Boring (Aug 2012)
- Catch Basin
- Dry Well
- Bollards
- Soil Boring and Shallow Vapor Monitoring Well (Sept 2015)
- Soil Boring and Deep Vapor Monitoring Well (Sept 2015)
- Soil Boring (Sept 2015)
- Vault
- SVE–1 — Shallow SVE Well (Aug 2012)
- SVE–2 — Deep SVE Well (Aug 2012)
- PIT–N — Abandoned UST Sample (Feb 2012)
- G = Gasoline

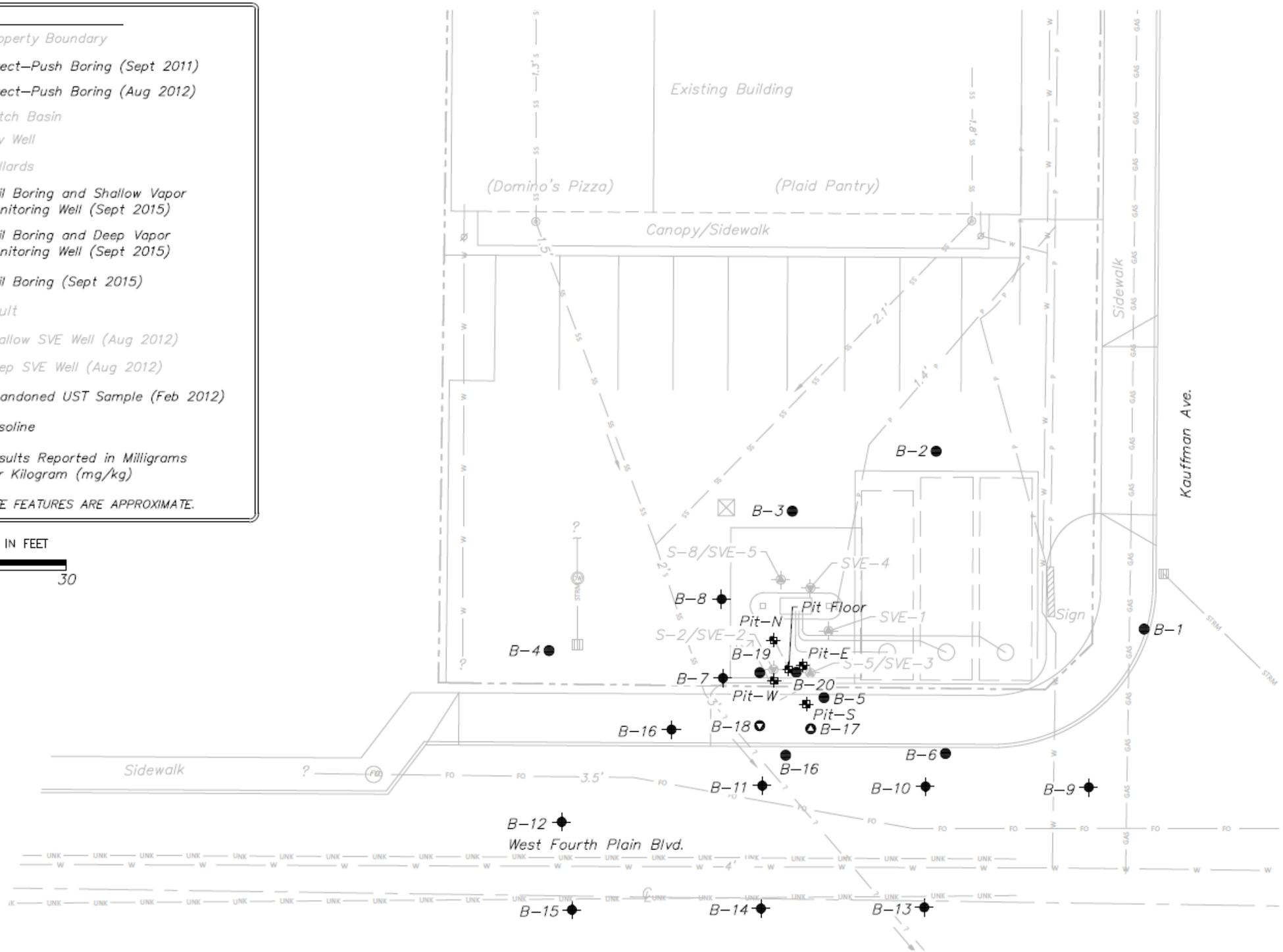
Results Reported in Milligrams per Kilogram (mg/kg)

SITE FEATURES ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET

0 15 30

N



DATE:	6–1–18
FILE:	1179–01
DRAWN:	JJT
APPROVED:	CR
PROJECT NO.	1179–01
FIGURE NO.	3

SOIL SAMPLE LOCATIONS (2011–2015)

PLAID PANTRY #112
1002 W. FOURTH PLAIN BLVD.
VANCOUVER, WA.

EES
ENVIRONMENTAL CONSULTING, INC.
240 N Broadway #203, Portland, OR 97227
(503) 847-2740
www.ees-environmental.com

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LEGEND

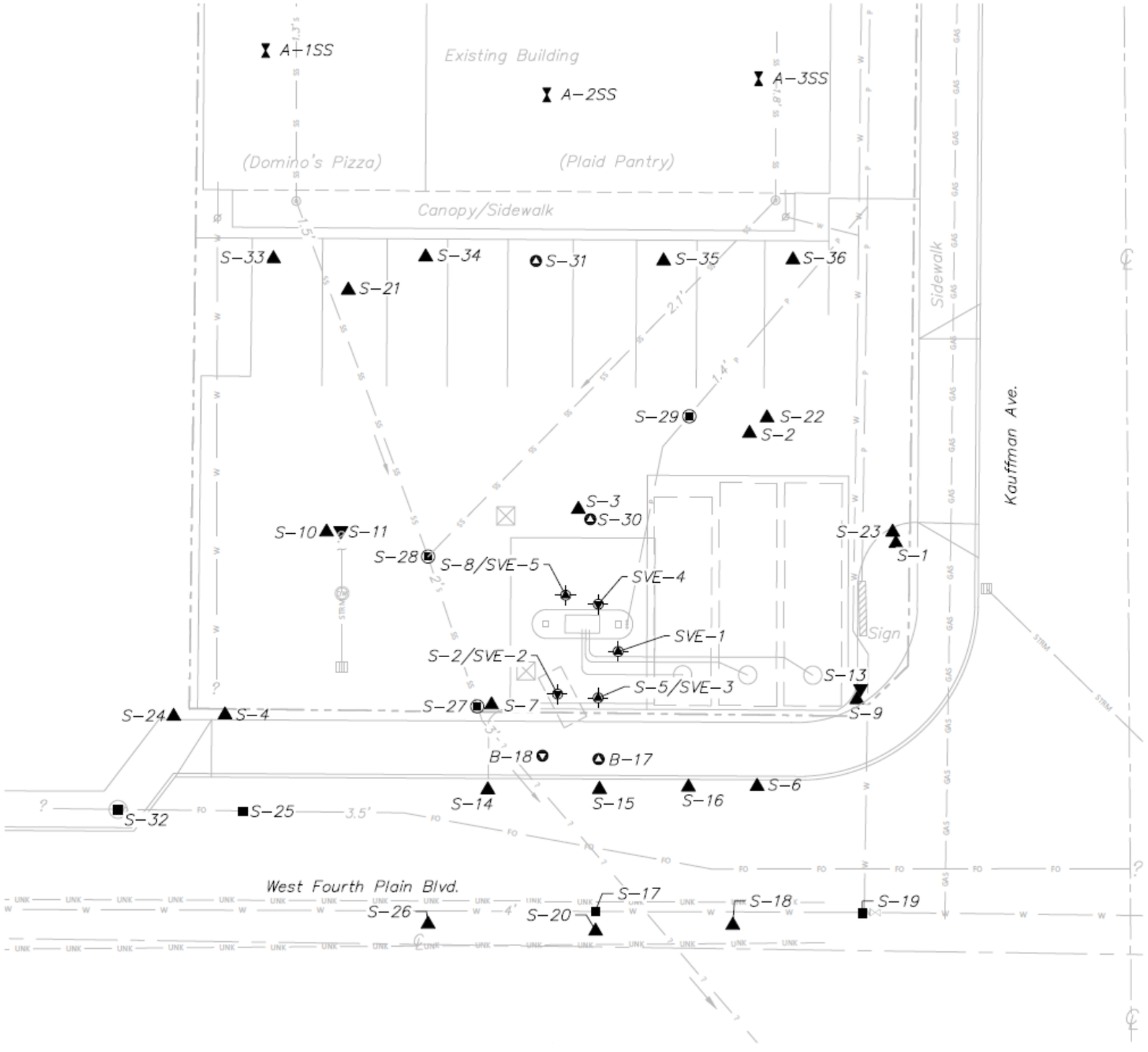
- Property Boundary
- Vault
- SVE Piping
- ▲ Shallow Soil Vapor Sample (5' bgs, Aug 2012)
- ▼ Deep Soil Vapor Sample (15' bgs, Aug 2012)
- SVE–1 Shallow SVE Well (Screened 5–10' bgs)
- SVE–2 Deep SVE Well (Screened 15–20' bgs)
- S–28 Utility Vapor Monitoring Well (Screened at Various Shallow Depths in Trench Backfill)
- B–17 Shallow Vapor Monitoring Well (Screened 5–10' bgs)
- B–18 Deep Vapor Monitoring Well (Screened 15–20' bgs)
- S–21 ▲ Soil Vapor Sample (5' bgs)
- S–32 ■ Utility Vapor Sample (Various Depths)
- S–33 ▲ Tier 1 Soil Vapor Sample (5' bgs, June 2016)
- A–1SS Tier 2 Sub–Slab Vapor Sample (Sept. 2016)

SITE FEATURES ARE APPROXIMATE

APPROXIMATE SCALE IN FEET

0 15 30

N



DATE:	6–1–18
FILE:	1179–01
DRAWN:	JJT
APPROVED:	CJ
PROJECT NO.	1179–01
FIGURE NO.	6

SOIL VAPOR SAMPLING LOCATIONS

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March 7, 2019

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The following is in response to your request for proof of delivery on your item with the tracking number: **9489 0090 0027 6066 5562 59**.

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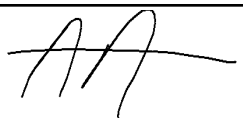
Status Date / Time:	February 22, 2019, 12:27 pm
Location:	BEAVERTON, OR 97005
Extra Services:	Certified Mail™
	Return Receipt Electronic
Recipient Name:	MARK CONAN

Shipment Details

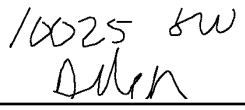
Weight:	3.1oz

Recipient Signature

Signature of Recipient:



Address of Recipient:



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