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Technical Memorandum

To: Jonathan Polonsky and Brent Chadwick - Plaid Pantries, Inc.
From: Paul Ecker, LHG and Chris Rhea, LG
Date: May 23, 2016

Subject: **Vapor Intrusion Assessment Work Plan**
Plaid Pantries Store #112
1002 West Fourth Plain Boulevard
Vancouver, Washington
Ecology VCP File #SW1314
EES Project #1179-01

EES Environmental Consulting, Inc. (EES) has prepared this work plan to describe proposed Vapor Intrusion Assessment (VIA) activities at the Plaid Pantries (Plaid) Store #112 Site located in Vancouver, Washington (Figure 1). Various actions are being conducted at this Site to address subsurface gasoline impacts as detailed in a recent status report (EES 2016).

Gasoline-related impacts exceeding soil cleanup levels and soil vapor screening criteria are located within 100 feet of the Property's commercial-use building, which is currently occupied by a Plaid convenience store and Domino's Pizza carry-out restaurant. The proposed VIA scope of work is intended to supplement site characterization activities as a necessary element for completing remedial investigation (RI) activities under the Model Toxics Control Act (MTCA Chapter 173-340 and -360 WAC). Specific Site conditions triggering this VIA work scope were discussed with and requested by Eugene Radcliff of the Washington Department of Ecology (Ecology) in early 2016.

BACKGROUND

This work plan incorporates Site RI data developed through September 2015 as discussed with Plaid and Ecology.

SITE CHARACTERIZATION STATUS

Contaminants of Interest (COIs) at the Site include gasoline and related constituents which appear to be limited to shallow soil and vapors beneath the Property and the adjacent Fourth Plain right-of-way (ROW). With the exception of seasonally perched water associated with infiltration and underground utility features, groundwater at the Site is not anticipated within 60 to 80 feet of ground surface, and is

not regarded as an affected or threatened medium with regard to gasoline impacts (EES 2016). Figure 2 illustrates pertinent site layout and generalized soil vapor delineation features based on the 2015 investigation data.

Non-gasoline chlorinated solvents including tetrachloroethene (PCE) are present in subsurface vapors at this Site, but are not known or suspected to be related to any current or past fueling or other operations conducted by Plaid. As discussed with and confirmed by Ecology in a meeting on April 30, 2015, Plaid is not responsible for the release of non-gasoline chemical impacts and therefore is not conducting further investigation or cleanup of such chemicals.

REGULATORY SETTING

Ongoing site investigation and cleanup activities are being conducted by Plaid in accordance with MTCA rules. Plaid enrolled in Ecology's Voluntary Cleanup Program (VCP) in 2013 to facilitate necessary response activities and has maintained ongoing communication and submitted pertinent technical documents to the Department for review and comment.

Because gasoline impacts identified at the Site exceed default MTCA Method A soil cleanup criteria and Method B vapor screening levels, Plaid began interim cleanup actions in 2013 before completion of the RI to control vapor migration and to begin mitigating identified gasoline impacts. The interim remedy includes ongoing soil vapor extraction (SVE) at the gasoline source area and is consistent with elements of an Interim Action as defined under MTCA (WAC 173-340-430), as supplemented by published guidance for evaluating potential vapor intrusion and the remediation of petroleum-contaminated sites (Ecology 2009, 2011). Interim action operations and performance trends are reported to Ecology on a regular basis.

In order to develop a final cleanup plan for gasoline impacts, Plaid intends to complete the RI and prepare a focused Feasibility Study (FS) in accordance with MTCA requirements. As discussed with Ecology during 2015 and early 2016, the planned VIA work described in this memo is intended to resolve remaining RI data gaps such that the RI/FS report can be completed in a timely manner.

ECOLOGY VAPOR INTRUSION GUIDANCE

Ecology's published guidance for vapor intrusion (VI) is applicable to Site conditions because the following conditions are present:

- Identified gasoline contaminants in soil and soil vapors include volatile constituents of potential human health concern, primarily benzene.
- The Property building is located within 100 feet from the zone of gasoline contamination.

Although published in draft form, Ecology's 2009 guidance is currently being applied in Washington State and is appropriate for this site based on recent discussions with Eugene Radcliff. The guidance establishes a general methodology for characterizing and evaluating the VI exposure pathway, and includes a decision matrix including triggers for supplemental investigation and cleanup tasks based on comparing site-specific vapor concentrations to default numeric MTCA B soil gas and/or indoor air screening level values (SLVs).

As indicated on Table B-1 (revised August 2015) of the guidance, Ecology's risk-based soil gas SLVs for the main COIs identified at the Plaid #112 site are as follows:

- Benzene = 10.7 micrograms per cubic meter (ug/m^3)
- Toluene = 76,200 ug/m^3.
- Ethylbenzene = 15,200 ug/m^3.
- Xylenes = 1,520 ug/m^3.
- Naphthalene = 2.45 ug/m^3.

Preliminary data collected near the Property building in 2015 indicated the presence of measureable gasoline and constituent soil vapors including benzene concentrations between 100 and 140 ug/m^3, which exceed the SLV of 10.7 ug/m^3.

TIERED VIA APPROACH AND RATIONALE

Ecology guidance specifies using a phased or "tiered" approach to VI evaluation such that vapor concerns can be addressed as necessary.

- Tier 1 Assessment includes screening-level evaluation to determine whether or not subsurface contaminant conditions exist that could lead to indoor air vapor intrusion. Since the gasoline source area is located within 100 feet of the Property building, the results of Tier 1 soil gas sampling near the building should be compared to Ecology's screening levels. EES will conduct Tier 1 VIA to include soil gas sampling locations adjacent to the existing Property building nearest to the gasoline source. If the data indicate concentrations below Ecology Method B Soil Gas SLVs, then further assessment to address potential gasoline vapor intrusion is not necessary. If soil gas concentrations exceed SLVs, then Tier 2 VIA efforts are anticipated (depending on observed concentrations and the magnitude of SLV exceedances).
- EES will conduct follow-up Tier 2 VIA activities only if indicated by Tier 1 findings. Tier 2 sampling will then be conducted to support the evaluation of possible vapor intrusion into indoor air. This effort will include simultaneous sampling of indoor and outdoor air, as well as soil vapors collected from immediately beneath the Property building's floor slab. Barometric and wind conditions at the time of sampling will also be considered as part of this evaluation.

EES' soil gas sampling approach is consistent with published guidance regarding sampling methodology, analytical testing methods, data evaluation, and attenuation factor concepts. Additionally, EES methodology was developed based on published federal guidance documents including (among others) U.S. EPA (EPA 2015) and Interstate Technology and Regulatory Council (ITRC 2007, 2014). Among these published guidance documents, there is general consensus on the applicability and methodology of using properly-collected soil gas data to estimate the flux of vapors to indoor settings.

SCOPE OF WORK

EES will conduct Tier 1 VIA activities to include five soil gas sampling locations adjacent to the existing Property building along its south side (nearest to the gasoline source). A contingency for Tier 2 VIA work is also scoped, but would not be implemented unless Tier 1 findings indicate soil gas concentrations near the building exceed the current MTCA Method B SLVs. Details are provided below.

The active SVE system will be shut down a minimum of one week prior to any soil gas, air, and sub-slab vapor sampling activities.

TASK 1: TIER 1 VIA

Tier 1 VIA activities are proposed for the area located immediately south of the existing Property building, as shown on Figure 3 and described below.

- Update the site Health and Safety Plan to guide field safety protocols, in accordance with rules established by the Occupational Safety and Health Administration (OSHA) and Washington Industrial Safety and Health Act (WISHA).
- Perform site visit to mark proposed sampling locations for utility identification purposes.
- Request utility identification through the public Northwest Utility Notification Center (NUNC) as required before drilling.
- Contract with a qualified local firm to attempt to identify and avoid underground utility features and conduits located near each planned drilling location.
- Advance and sample four temporary direct-push soil gas borings (S-33 through S-36), and collect one vapor sample from existing vapor monitoring well S-31, with all samples collected adjacent to the Property building at depths of five feet, as illustrated in Figure 3. Purge and collect discrete soil gas samples using specially-designed soil-gas sampling equipment and laboratory-certified Summa containers. Soil gas sampling point installation, sampling equipment leak detection testing using helium tracer gas, field quality control verification, and soil gas sampling methods will be performed in accordance with EES protocols and Ecology VI guidance. Standard Operating Procedures are available upon request.
- Submit the five soil gas samples for laboratory analysis of gasoline and related VOCs by EPA Method TO-15.
- Compare measured soil gas concentrations to published MTCA Method B "sub-slab" soil gas screening levels to determine whether vapor intrusion to the building can be eliminated from further consideration on the basis of the Tier 1 VIA activities.

- Provide a brief written report summarizing the Tier 1 VIA field activities and analytical testing results.

If Tier 1 soil gas concentrations demonstrate clear exceedance of MTCA screening criteria, then Tier 2 VIA activities will be initiated, as described below.

TASK 2: TIER 2 VIA

If indicated by Tier 1 findings, EES will conduct Tier 2 VIA activities to further evaluate potential indoor air vapor intrusion to the Property building. This scope of work is limited to one-time sampling of indoor air, outdoor air, and sub-slab soil vapors at the existing Property building as described below.

All air and vapor samples will be collected using laboratory-certified twenty-four hour flow controllers which are intended to allow for representative work-shift sampling.

Because of temporal and seasonal variability associated with vapor intrusion assessment, additional characterization may be necessary (subject to discussion with Plaid and Ecology).

Planned Tier 2 VIA tasks are as follows.

- Perform a site survey to facilitate the development of a conceptual site model (CSM). To the extent possible, site research will evaluate factors that may influence indoor air quality including (if possible): determining site occupancy and potential future use; ownership; building type; evaluation of indoor air flow; identification of foundation and construction characteristics; identification of obvious cracks, seams, or other preferential indoor vapor migration pathways in foundation materials; determination of heating, ventilation, and air conditioning systems; identifying types and locations of underground utilities; detailed floor plans; detailed building surroundings; and (to a reasonable extent) compilation of an inventory of products in use in the building that have the potential to affect indoor air quality.
- Develop a CSM for the Property building. The CSM will include: a plan view drawing of the building showing its spatial relationship to the potential vapor source; a drawing of the airflow pathways for the building and its HVAC system including notations for portions of the building that are pressurized during operation of the HVAC system; a cross-sectional view of the building and unsaturated zone; and a narrative that provides explanations for critical assumptions made in depicting site conditions.
- If necessary, refine and implement the site specific sampling and analysis plan for the Property building (see below) based on the conceptual model for the building.
- Collect barometric pressure data for selected sampling areas both within and outside the building (before, during, and after sampling).
- <u>Indoor Air Sampling (three samples total):</u>
  - Operate the occupied building's HVAC system(s) as necessary to establish representative air quality conditions prior to sampling.
  - Collect one indoor air sample from the Plaid store and one sample from the Domino's Pizza area of the building.
  - Collect one indoor air sample from Plaid maintenance room in the vicinity of a utility penetration through the concrete slab foundation of the building (if identified).

- Outdoor Air Sampling (six samples total):
  - Collect one outdoor ambient air sample adjacent to each HVAC system intake manifold located upwind (two samples anticipated).
  - Collect outdoor ambient air samples from upwind breathing zones near the building entrances and at an upwind and downwind onsite location that are at least 5-15 feet from the building, if possible.
  - Measure wind speed and direction at one representative outdoor sampling location.
- Sub-Slab Sampling (three samples total):
  - Mark proposed sub-slab sampling locations for utility identification purposes.
  - Request utility identification through the public Northwest Utility Notification Center (NUNC) as required before drilling.
  - Contract with a qualified local firm to attempt to identify and avoid underground utility features and conduits located at each planned sub-slab drilling location.
  - Collect three sub-slab soil vapor samples generally corresponding with areas of the building where indoor air samples will be collected.
- Submit air and sub-slab vapor samples for laboratory analysis by EPA Method TO-15 SIM.
- Prepare a brief written report to consolidate the Tier 1 and Tier 2 VIA findings and CSM, and provide conclusions and general recommendations for follow-up activities, if necessary.

Tier 2 VIA air and vapor sampling locations are described below and illustrated on Figure 4.

INDOOR AIR AND SUB-SLAB VAPOR SAMPLING

Following site inventory/survey work, proposed Tier 2 VIA indoor air, sub-slab soil vapor, and outdoor air sampling would be conducted as described below. EES Standard Operating Procedures for each sampling method are available upon request.

INDOOR AIR

EES will collect air samples at three locations inside the Property building. Proposed sample locations are described below and illustrated on Figure 4.

- A-1ai – Main work area in the Domino's Pizza portion of the building.
- A-2ai – Main store area in the Plaid portion of the building.
- A-3ai – Maintenance Room with utility penetrations in the east portion of the building.

SUB-SLAB SOIL VAPOR

EES will collect sub-slab soil vapor samples at three locations, generally corresponding with the indoor air sampling locations described above. Proposed sample locations are described below and illustrated on Figure 4.

- A-1ss – Main work area in the Domino's Pizza portion of the building.
- A-2ss – Main store area in the Plaid portion of the building.

- A-3ss – Maintenance Room with utility penetrations in the east portion of the building.

Proposed boring locations may be adjusted based on the findings of the site survey.

OUTDOOR AIR SAMPLING

HVAC SYSTEM INTAKE AREA(S)

EES will collect outdoor air samples at exterior locations where HVAC system intake vents are located. We anticipate one to two such samples, depending on if Plaid and Domino's intakes are at shared or separate locations. Sampling height will correspond to the intake vent feature. Sample locations will be dependent on the prevailing wind direction on the day of the field activities. Prevailing wind directions fluctuate seasonally in the Vancouver area. If necessary, the VIA will likely be implemented during the summer of 2016, when the prevailing wind direction is typically from the southeast (i.e. a southeasterly wind). Tentative proposed sample locations based on an assumed easterly prevailing wind direction are described below and illustrated on Figure 4.

- A-4ao – Domino's Pizza HVAC intake vent.
- A-5ao – Plaid store HVAC intake vent.

EXTERIOR BREATHING ZONE AREAS

EES will collect ambient outdoor air samples at four additional locations, including building margins/rooftop and entrances. Where feasible, sample heights will be within the average breathing zone between three to six feet above ground surface. Sample locations will be dependent on the prevailing wind direction on the day of the field activities. Tentative proposed sample locations based on an assumed southeasterly prevailing wind direction are described below and illustrated on Figure 4.

- A-6ao – Immediately upwind of the Domino's Pizza entrance to the building.
- A-7ao – Immediately upwind of the Plaid store entrance to the building.
- A-8ao – Upwind of the building.
- A-9ao – Downwind or cross-wind of the building (limited by Property boundaries).

BAROMETRIC PRESSURE MONITORING

In an effort to evaluate the nature of air pressure conditions (positive, negative, or neutral) inside the Property building relative to ambient outdoor conditions, EES will collect simultaneous barometric pressure data at selected indoor and outdoor locations. Barometric pressure data will be collected for a twenty four-hour period during the monitoring event.

The equipment that will be utilized for the barometric pressure monitoring will include the following:

- Two Kestrel 4500 Pocket Weather Trackers for temperature/humidity/barometric pressure data logging.
- One Davis Vantage Pro 2 wireless weather station.

The weather station and data loggers will initially be set up in an indoor location (the main Plaid store area) prior to the monitoring event for calibration purposes. The weather station will be calibrated to

the two Kestrel pressure loggers, and then the pressure loggers will be transferred to their measurement locations within the building. One of the pressure loggers will be placed in the Domino's Pizza work area in the vicinity of indoor air sampling location A-1. The second pressure logger will be placed in the Plaid store area in the vicinity of indoor air sampling location A-2. The weather station will be set up on the rooftop of the Property building. This outdoor station will provide the "ambient" baseline for comparison to indoor air pressures.

LABORATORY ANALYTICAL METHODS

Indoor air, outdoor air, and sub-slab vapor samples will be submitted to the Air Toxics Ltd. (Folsom, California) laboratory under chain-of-custody for analysis of gasoline and related volatile constituents by EPA Method TO-15 SIM.

CONCEPTUAL SITE MODEL REVISION

The Conceptual Site Model (CSM) evaluates current and reasonably likely future Site conditions, and identifies potential sources of hazardous substances, potentially affected media, and potential migration and exposure pathways for anticipated human and ecological receptors. The CSM is a required element of the RI (Ecology 2011), and will be updated to reflect current site conditions as determined during this VIA.

PROPOSED SCHEDULE

EES proposes to initiate Tier 1 VIA work plan activities within two weeks of Plaid's authorization (including site access from the property owner). Depending on Tier 1 results, the need and schedule for next steps (Tier 2 planning activities) will be discussed with Plaid prior to initiation.

ASSUMPTIONS

The proposed work is recommended in accordance with Ecology's published environmental cleanup rules and EES' experience at similar sites. Additional investigation or remedial actions may be required to fully address areas of concern, if identified.

Assumptions used to generate the work plan are as follows:

- Meetings, negotiations, and submittals to regulatory agencies are not included in the scope of work.
- This work plan was prepared in accordance with regulatory guidance as indicated, and EES' proposed work is expected to proceed under Ecology's "Independent Cleanup" framework. To the extent that future technical consultation with Ecology results in work plan modifications, such modifications are not included or budgeted within this scope.
- Access to the subject property and negotiations with the property owner and/or tenants will be arranged by Plaid, and all fieldwork can be conducted during normal business hours.
- Unimpeded access to the work area(s) will be available, including no overhead or underground utility conflicts.

- EES assumes each VIA sampling event (Tier 1 and 2) can be accomplished during normal working hours. Tier 1 work is planned for a single day. Tier 2 sampling work will require two field days.
- No unreasonably difficult subsurface conditions will be encountered requiring the use of alternative drilling/excavation equipment.
- All fieldwork can be performed using standard personal protective equipment and procedures (Level D).
- Other than Ecology drilling permits/start cards (which are included in this scope), no other permits are specified or included. If necessary, such permits would be obtained at an additional time and materials cost basis.
- A public utility locate notification will be conducted and EES will contract a private utility locator in an effort to identify subsurface utilities at each proposed drilling location. The use of these methods does not guarantee that unidentified conduits/structures will not be encountered during drilling, but greatly minimizes the risk of doing so. EES will not be responsible for damage to subsurface utilities not identified to us prior to initiating work.
- Expedited or alternative laboratory analyses are not included in this work scope unless otherwise noted.
- Equipment decontamination rinsate, soil cuttings, and other debris may be generated as part of the proposed work. The investigation-derived wastes (IDW) will be contained in sealed and properly labeled 55-gallon steel drums (or in a covered steel drop box) and stored onsite. EES will coordinate disposal of IDW. However, characterization and disposal costs for the IDW, if any, are not included under this proposal.

ATTACHMENTS

Figures

Figure 1: Site Features
Figure 2: Soil Vapor Concentrations (August-September 2015)
Figure 3: Proposed Tier 1 VIA Sample Locations
Figure 4: Proposed Tier 2 VIA Sample Locations

REFERENCES

Ecology, 2009. *Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action (Review Draft)*. Washington Department of Ecology, Toxics Cleanup Program. October 2009.

Ecology 2011. *Guidance for Remediation of Petroleum-Contaminated Sites*. Washington Department of Ecology, Toxics Cleanup Program. September 2011.

EES 2016. *Perched Groundwater Evaluation – Plaid Pantry Store #112*. EES Environmental Consulting. March 30, 2016.

EPA 2015. *OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air.* U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. June 2015.

ITRC 2007. *Vapor Intrusion Pathway: A Practical Guideline.* The Interstate Technology & Regulatory Council, Petroleum Vapor Intrusion Team. January 2007.

ITRC 2014. *Petroleum Vapor Intrusion – Fundamentals of Screening, Investigation, and Management.* The Interstate Technology & Regulatory Council, Petroleum Vapor Intrusion Team. October 2014.

FIGURES

LEGEND

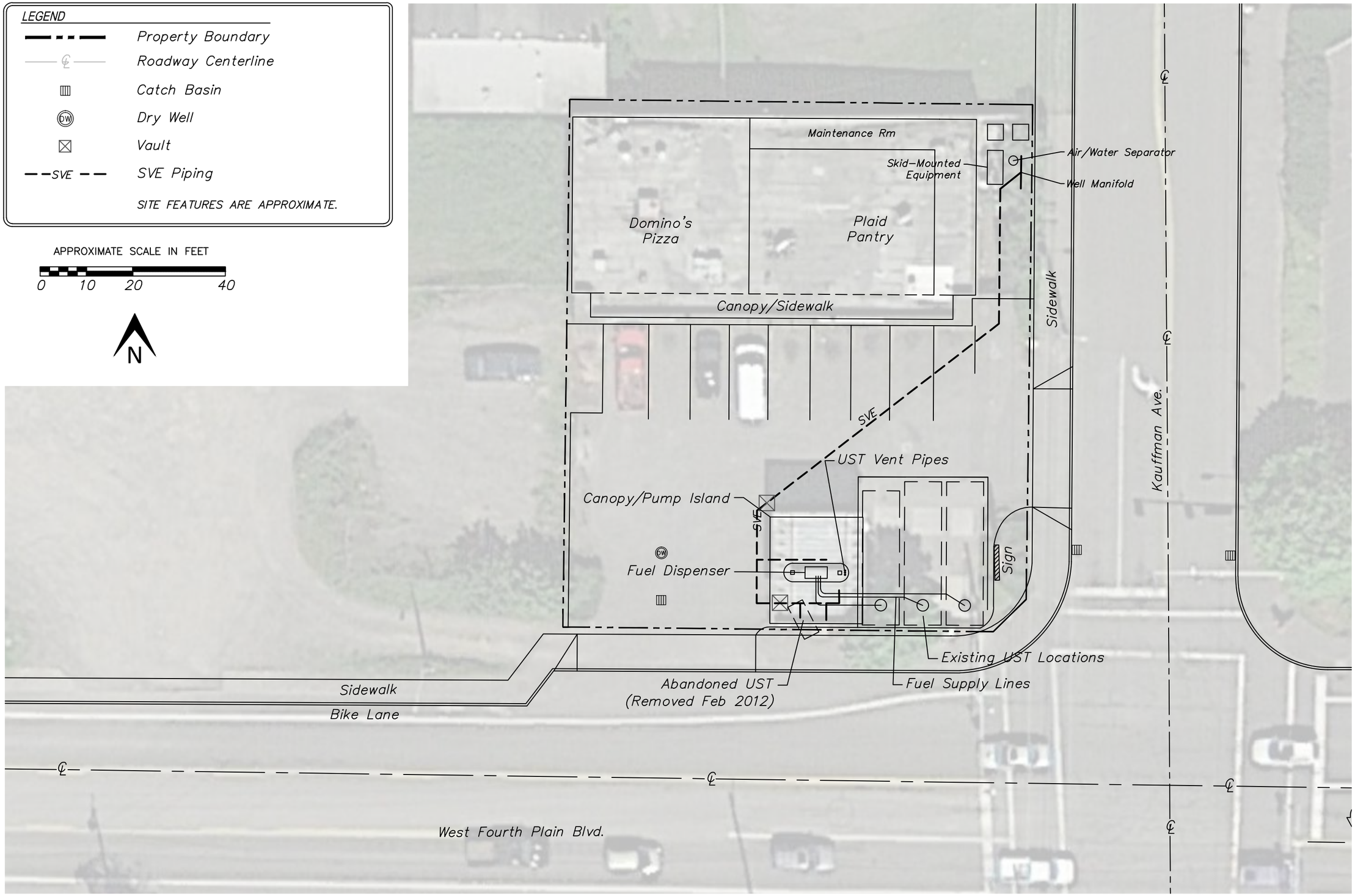
- Property Boundary
- Roadway Centerline
- Catch Basin
- Dry Well (DW)
- Vault
- SVE Piping (SVE)

SITE FEATURES ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET

0 10 20 40

N



PROJECT NO.	1179-01
DATE:	5-20-16
FILE:	1179-01
DRAWN:	JJT
APPROVED:	CR
FIGURE NO.	1

SITE FEATURES

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

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LEGEND

- Property Boundary
- Vault
- SVE Piping
- Shallow Soil Vapor Sample (5' depth, Aug 2012)
- Deep Soil Vapor Sample (15' depth, 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, Unless Indicated Otherwise)
- S-32 — Utility Vapor Sample (Collected at Various Depths)
- G = Gasoline
- B = Benzene
- * = Samples Collected During Active SVE Operations in August 2015. All Other Data Shown Collected in September 2015)
- 10 — Approximate Benzene Vapor Isoconcentration Contour (ug/m³)

RESULTS IN MICROGRAMS PER CUBIC METER (ug/m³)

S-21 G=7,200 B=100
S-31 G=740 B=5.4
S-29 G=4,600U B=36U
S-22 G=8,600 B=140
S-3
S-30 G=560U B=4.3U
S-23 G=2,000 B=20
S-10 S-11
S-28 G=570U B=4.4U
SVE-4* G=530U B=4.1U
SVE-4* G=520U B=4.1U
SVE-1* G=8,600 B=19
SVE-2* G=550U B=4.3U
SVE-3* G=3,600 B=4.3U
S-13
S-27 G=540U B=4.2U
S-9
S-24 G=520U B=4.7
B-18 G=17,000 B=3.9U
B-17 G=4,900,000 B=120
S-14 G=8,600 B=130
S-15 G=46,000 B=500
S-16 G=5,000 B=130
S-32(5 ft) G=550U B=4.3U
S-25 G=600 B=5.9
S-26 G=560U B=4.4U
S-20 G=540U B=4.5
S-17(4 ft) G=590U B=4.6U
S-18 G=580U B=4.5U
S-19(1.3 ft) G=540U B=4.2U

West Fourth Plain Blvd.

N

APPROXIMATE SCALE IN FEET
0 5 10 20

PROJECT NO. 1179-01
FIGURE NO. 2
DATE: 5-18-16
FILE: 1179-01
DRAWN: JJT
APPROVED: CR

SOIL VAPOR CONCENTRATIONS (AUGUST-SEPTEMBER 2015)

PLAID PANTRY #112
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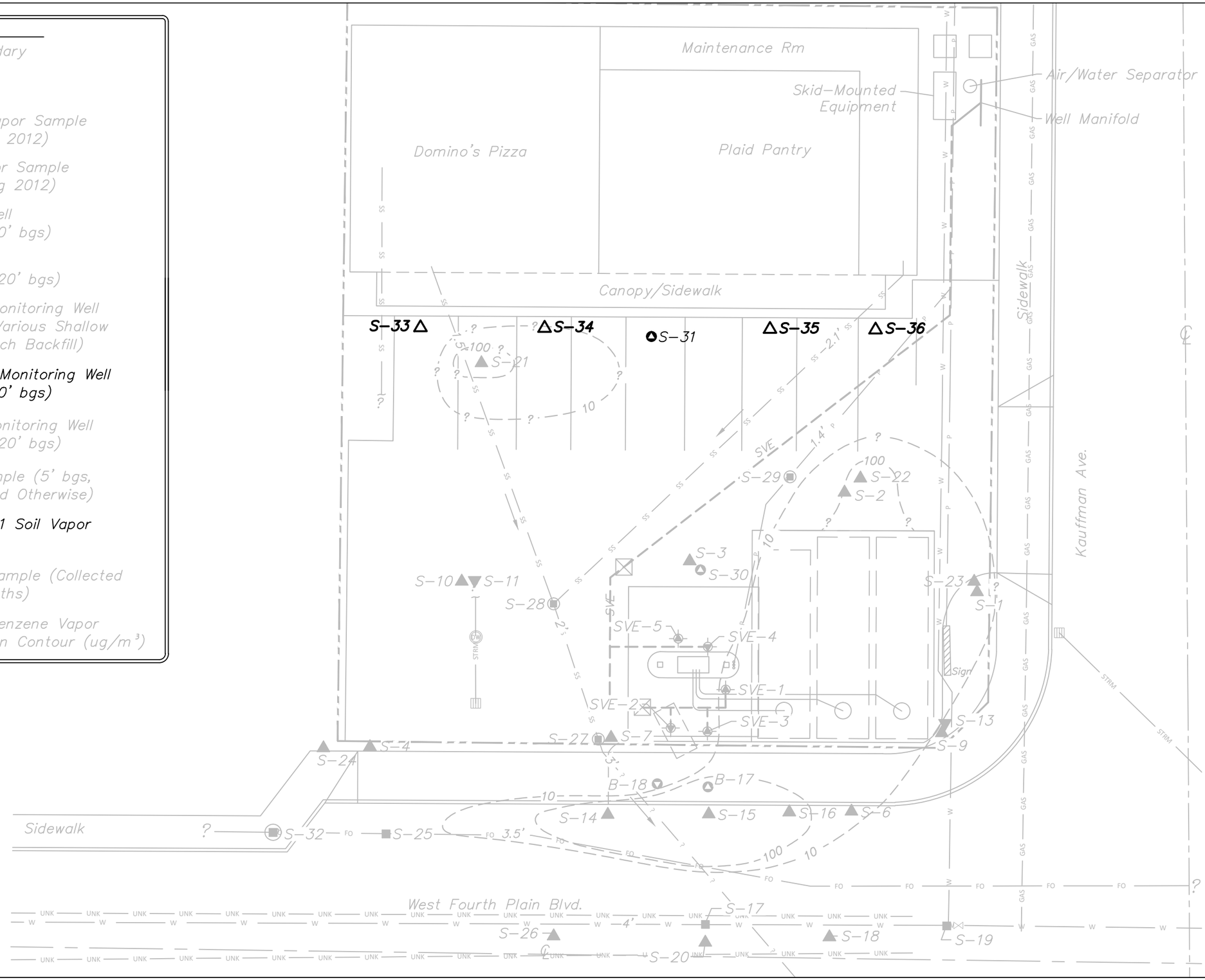
LEGEND

- Property Boundary
- Vault
- SVE Piping
- Shallow Soil Vapor Sample (5' depth, Aug 2012)
- Deep Soil Vapor Sample (15' depth, 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, Unless Indicated Otherwise)
- **S-33** — Proposed Tier 1 Soil Vapor Sample (5')
- S-32 — Utility Vapor Sample (Collected at Various Depths)
- 10 — Approximate Benzene Vapor Isoconcentration Contour (ug/m³)



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APPROXIMATE SCALE IN FEET

0 15 30

PROJECT NO.	1179-01
FIGURE NO.	3
DATE:	5-20-16
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PROPOSED TIER 1 VIA SAMPLE LOCATIONS

PLAID PANTRY #112
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LEGEND

- Property Boundary
- Vault
- SVE Piping
- Shallow Soil Vapor Sample (5' depth, Aug 2012)
- Deep Soil Vapor Sample (15' depth, 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, Unless Indicated Otherwise)
- Proposed Tier 1 Soil Vapor Sample (5')
- Proposed Tier 2 Sub-Slab Vapor, Indoor or Outdoor Air Sample (Subject to modification based on access limitations and observed wind direction at the time of sampling)
- S-32 — Utility Vapor Sample (Collected at Various Depths)
- 10 — Approximate Benzene Vapor Isoconcentration Contour (ug/m³)

Maintenance Rm
Skid-Mounted Equipment
Air/Water Separator
Well Manifold
Domino's Pizza
Plaid Pantry
A-1
A-2
A-3
A-4 (Outdoor)
A-5 (Outdoor)
A-6 (Outdoor)
A-7 (Outdoor)
A-8 (Outdoor)
A-9 (Outdoor)
Canopy/Sidewalk
Sidewalk
Kauffman Ave.
West Fourth Plain Blvd.
S-33
S-34
S-35
S-36
S-31
S-21
S-29
S-22
S-2
S-3
S-30
S-10
S-11
S-28
S-23
S-1
SVE-5
SVE-4
SVE-1
SVE-2
SVE-3
S-27
S-7
S-13
S-9
S-4
S-24
B-18
B-17
S-14
S-15
S-16
S-32
S-25
S-26
S-17
S-18
S-19
S-20
Sign
STRM
SVE
Presumed Summer Wind Direction (To be verified during sampling)

N

APPROXIMATE SCALE IN FEET

0 15 30

PROJECT NO.	1179-01
DATE:	5-20-16
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DRAWN:	JJT
APPROVED:	CR
FIGURE NO.	4

PROPOSED TIER 2 VIA SAMPLE LOCATIONS

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

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