STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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Electronic Copy

April 11, 2017

Mr. Alan Noell
Aspect Consulting
401 Second Avenue, Suite 201
Seattle, Washington 98104

Re: Opinion on Proposed Cleanup of the following Site:

- **Site Name:** Walker Chevrolet (aka, Bruce Titus Chevrolet, Friendly Chevrolet)
- **Site Address:** 633 Division Avenue, Tacoma, Washington 98403-3126
- **Facility/Site No.:** 3427832
- **Cleanup Site ID:** 5318
- **VCP Project No.:** SW1040

Dear Mr. Noell:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your proposed independent cleanup of the former Walker Chevrolet facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Upon completion of the proposed cleanup, will further remedial action likely be necessary to clean up contamination at the Site?

NO. Ecology has determined that, upon completion of your proposed cleanup, no further remedial action will likely be necessary to clean up 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, and its implementing regulations, Chapter 173-340 WAC (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:

- Total petroleum hydrocarbons (TPH) in the gasoline range (TPH-G), TPH in the diesel range (TPH-D), TPH in the oil range (TPH-O) into the Soil and Groundwater.
- Volatile organic compounds (VOCs) into the Soil, Groundwater, and Air.
- Chlorinated VOCs into the Soil, Groundwater, and Air.
- Metals into the Soil and Groundwater.
- Polychlorinated biphenyls (PCBs) into the Soil.
- Vapor-phase hydrocarbons into the Air.

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology.

Please note that parcel(s) of real property associated with this Site are also located within the projected boundaries of the Morrells Dry Cleaning facility (Facility/Site ID #18489568). At this time, we have no information that those parcel(s) are actually affected. This opinion does not apply to any contamination associated with the Morrells Dry Cleaning facility (Morrell's).

Please note the parcel of real property associated with this Site is also located within the projected boundaries of the Asarco Tacoma Smelter facility (# 89267963). At this time, we have no information that the parcel is actually affected. This opinion does not apply to any contamination associated with the Asarco Tacoma Smelter facility.

Basis for the Opinion

1. Aspect Consulting, LLC (Aspect), *Remedial Investigation and Feasibility Study*, dated July 25, 2016

2. Aspect, *Focused Feasibility Study, Former Walker Chevrolet,* dated June 3, 2015.

3. Aspect, *Focused Feasibility Study, Former Walker Chevrolet,* dated May 16, 2014.

4. Stemen Environmental, Inc. (Stemen), *Due Diligence Sampling for Walker Chevrolet, 633 Division Avenue, Tacoma, WA 98403,* dated August 2006.

5. Bison Environmental Northwest, Inc. (Bison), *Independent Remedial Action Report Summary and Disposal Certificate, Walker Chevrolet, 633 Division Avenue, Tacoma, WA,* dated December 7, 1994.

6. Bison, *Phase 2B Subsurface Sampling, Walker Chevrolet – Paint Booth, 633 Division Avenue, Tacoma, WA,* dated September 12, 1994.

7. Bison, *UST Removal Site Assessment and Independent Remedial Action Report for Walker Chevrolet, 633 Division Avenue, Tacoma, WA 98403,* dated August 1994.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

Analysis of the Cleanup

Ecology has concluded that, upon completion of your proposed cleanup, **no further remedial action** will likely be necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described in more detail in Ecology's previous opinion letter dated November 17, 2014 (Attachment A).

The Site contains two tax parcels, located at 633 Division Avenue and 100 North G Street in Tacoma, Washington (Figure 1). Tax parcel 2030-12-0032 includes the former south gas station and the former paint booth area and tax parcel 2031-13-0025 includes the former north gas station (Figure 2).

Between 1994 and 2016 multiple investigations of soil, groundwater, and air (indoor, ambient, and sub slab) were completed at the Site (Tables 1 through 5).

Summary of 2016 Investigations:
In March 2016, Aspect advanced deep soil boring AB-2D adjacent to soil boring AB-2 to delineate the vertical extent of soil contamination. TPH-G was detected at concentrations of 670 mg/kg at 15 feet bgs and at 18 mg/kg at 27.5 feet bgs.

On April 20, 2016, Aspect decommissioned monitoring well MW-1, located within the former south gas station footprint during building expansion activities.

During February and May 2016, Aspect advanced soil borings B10 to B21 using a dolly-mounted probe rig in the vicinity of former paint booth area. The dolly-mounted probe rig was the only rig capable of operating within the grocery store confines.

Soil boring B10 was advanced near the highest previously detected contamination to refine the vertical delineation of TPH and chlorinated VOC contamination detected in

borings B1and B5. No contamination was detected in boring B10, but since the probe met refusal at 5 feet bgs, borings B13 and B14 were advanced to delineate the vertical extent of contamination. The probe met refusal at 0.75 feet bgs in boring B13, but was able to extend to a depth of 11 feet bgs in boring B14. Four samples were submitted for the analysis of TPH-G, TPH-Dx, and VOCs. No constituents were detected above the MTCA Method A cleanup levels.

Four soil borings (B11, B12, B15, and B16) were advanced to define the lateral extent of contamination near the former paint booth. Borings B12 and B15 were advanced north and south of the former paint booth, boring B11 was advanced east of the former paint booth, and boring B16 was advanced on the sidewalk west of the former paint booth. TPH-G, TPH-D, TPH-O, lead, PCE, and PCBs were detected at 12,000 mg/kg, 5,800 mg/kg, 17,000 mg/kg, 3,250 mg/kg, 0.16 mg/kg, and 2.02 mg/kg, respectively at 5.5 feet in boring B11. No deeper samples were collected from boring B11 due to the limitations of the drilling rig. No analytes were detected above the MTCA Method A cleanup levels from borings B12, B15, or B16.

Aspect completed an additional investigation to delineate the extent contamination in the vicinity of boring B11 by advancing borings B17 through B21. TPH-G, toluene, and xylenes were detected at concentrations greater than the MTCA Method A cleanup levels at 190 mg/kg, 11 mg/kg, and 14 mg/kg, respectively at 9.5 feet bgs at boring B21. No analytes were detected above the MTCA Method A cleanup levels from borings B17 through B20.

Monitoring well MW-11 is located beneath the former paint booth area and downgradient of borings B11 and B21. Aspect collected groundwater samples from MW-11 on six occasions between May 2009 and February 2016. The concentrations of the chemicals of concern were below the Method A groundwater cleanup levels. TCE was the only chemical of concern detected in groundwater. The 95 percent upper confidence limit of the concentration of TCE is below the Method A groundwater cleanup level.

In March 2016, Aspect conducted a building survey which included interviewing the grocery store manager to identify chemical storage areas and the operation of the HVAC system, to inspect air intake dampers for the HVAC system, and to inspect and inventory chemicals in the storage areas. The building survey identified two HVAC systems, three air-intake dampers, two containers of oil, three cans of spray paint with light range hydrocarbons, and hydrocarbons in the floor cleaner, the sanitizer, and the disinfectant cleaner.

Aspect concluded that the building survey supported the conclusion that the benzene and vapor-phase hydrocarbon detections above the floor drain in the produce preparation area originate from vehicle exhaust sources outside the building and/or commercial processes inside the building. As indicated in WAC 173-340-750(1)(a), the MTCA cleanup standards for air quality do not apply to hazardous substances in the air that originate from commercial processes in the building or from off-Site sources.

In May 2016, Aspect collected sub-slab soil gas sample SSV-051016 in the immediate vicinity of soil boring B11 and analyzed it for select VOCs and chlorinated VOC only. No analytes were detected above the Method B sub-slab soil gas screening levels; however, vapor-phase hydrocarbons were not analyzed as sub-slab sample SS-FPB-032015 was used as confirmation in this area.

Remaining contamination at the Site above MTCA Method A cleanup levels includes TPH-G, TPH-D, TPH-O, BTEX, tetrachloroethylene, trichloroethylene, lead, and/or polychlorinated biphenyls in soil in the vicinity of the former paint booth area (Figure 3) or on the former south gas station property extending into the City of Tacoma right-of-way. (Figure 4).

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. MTCA Method A cleanup levels for unrestricted land use of soil and groundwater have been used to characterize the Site. The MTCA Method A cleanup levels used are:

Analyte	Soil:	Groundwater:	Air:
TPH-G	30 mg/kg	1,000 ug/l	NA
• TPH-D	2,000 mg/kg	500ug/l	NA
• TPH-O	2,000 mg/kg	500ug/l	NA
• Benzene	0.03 mg/kg	5 ug/l	0.321 ug/m3
• Toluene	7 mg/kg	1,000 ug/l	2,290 ug/m3
• Ethylbenzene	6 mg/kg	700 ug/l	457 ug/m3
• Xylenes	9 mg/kg	1,000 ug/l	45.7 ug/m3
• Lead (total)	250 mg/kg	15 ug/l	NA
• Arsenic	20 mg/kg	5 ug/l	NA
• PCE	0.05 mg/kg	5 ug/l	9.62 ug/m3
• TCE	0.03 mg/kg	5 ug/l	0.37 ug/m3
• PCBs (TEQ)	1 mg/kg	0.1 ug/l	NA

NA= NOT APPLICABLE

Standard points of compliance are currently being used for the Site. The point of compliance for protection of groundwater is established in the soils throughout the Site. 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 (bgs). In addition, 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 most depth that could potentially be affected by the Site.

3. Selection of cleanup action.

Ecology has determined the cleanup action you proposed for the Site meets the substantive requirements of MTCA.

In the July 17, 2016 Remedial Investigation Feasibility Study, Aspect selected Alternative 1 as the preferred remedy for this Site. Alternative 1 includes the decommissioning of MW-11, the recording of an environmental covenant for tax parcel 2030-12-0032, and notifying the City that TPH contamination was identified in the 15 to 16.5 foot bgs interval of permitted soil borings in the ROW, i.e., AB-2, AB-2D, and AB-3. The environmental covenant would require notification to Ecology of any soil disrupting activities that have the potential to distribute contamination.

COMMENTS:

Based on a review of the available information, **Ecology concurs with Aspect's conclusion the Site has been sufficiently delineated and is ready to select and conduct their proposed remedial alternative.** Ecology has the following comments:

1. Please provide a draft environmental covenant for review that includes the following:

    a. Restricts land use to activities that will not threaten human health or the environment.

    b. Contains contaminated soil under an impermeable containment cap.

    c. Provides a monitoring plan to ensure the long term effectiveness, maintenance, and integrity of the cap.

    d. Because PCS extends off-property into the North First Street and Division Avenue right-of-way, the environmental covenant needs to also include the City of Tacoma as a subordinate to the Environmental Covenant.

    e. As part of Exhibit A, legal description, please conduct a title search and include a parcel map depicting the location of the impacted parcels, including impacted portions of the right-of-way.

    f. Address easements and right-of-ways for potential applicable subordination agreements.

    g. The Site figure to be included as Exhibit B should clearly delineate the

remaining contamination.

i. Include a scaled accurate location of soil restrictions to be imposed on the Site.

ii. Include the accurate locations of soil, groundwater, and vapor sampling locations and borings. Depict each sample location that exceeds the applicable cleanup level. Illustrate these sampling locations in red and include a table with applicable contaminant concentrations.

2. In accordance with WAC 173-340-840(5), and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements), data generated for Independent Remedial Actions shall be submitted simultaneously in written and electronic format.

3. Tax parcel 2031-13-0025 (north gas station) does not need to be included in the environmental covenant and No Further Action is warranted. If a separate letter is required, please re-apply to the VCP for the north gas station property.

For more information on how to create an environmental covenant, please refer to the Uniform Environmental Covenants Act (UECA), Chapter 64.70 RCW, and WAC 173-340-440 of the MTCA Cleanup Regulation.

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. 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 proposed will be substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. Opinion is limited to proposed cleanup.

This letter does not provide an opinion on whether further remedial action will actually be necessary at the Site upon completion of your proposed cleanup. To obtain such an opinion, you must submit a report to Ecology upon completion of your cleanup and request an opinion under the VCP.

4. 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).

Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). As you conduct your cleanup, please do not hesitate to request additional services. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion, please contact me by phone at (360)407-6347 or e-mail at Nicholas.Acklam@ecy.wa.gov.

Sincerely,

Nicholas M. Acklam
SWRO Toxics Cleanup Program

NMA: kb

Enclosures ([10]): A – Attachments, Figures, and Tables of the Site

By Certified Mail: [91 7199 9991 7037 0279 7642]

cc: David C. and Barbara Shaw
Darrel E. and Lois J. Wickham, Revocable Trust
Zona M. Wickham c/o Todd Wickham
Mr. Rob Olson
Ms. Carol Johnston – Ecology
Mr. Matthew Alexander – Ecology

Attachment A

Ecology Opinion Letter November 17, 2014

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 · Olympia, Washington 98504-7775 · (360) 407-6300
711 for Washington Relay Service · Persons with a speech disability can call 877-833-6341

November 17, 2014

Mr. Joe Morrice
Aspect Consulting
401 Second Avenue, Suite 201
Seattle, Washington 98104

Re: Further Action at the following Site:

- **Site Name:** Bruce Titus Chevrolet
- **Site Address:** 633 Division Avenue, Tacoma, Washington 98403-3126
- **Facility/Site No.:** 3427832
- **Cleanup Site ID:** 5318
- **VCP Project No.:** SW1040

Dear Mr. Morrice:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Bruce Titus Chevrolet facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

YES. Ecology has determined that further remedial action is necessary to clean up 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, and its implementing regulations, Chapter 173-340 WAC (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:

- Total petroleum hydrocarbons (TPH) in the gasoline range (TPH-G), TPH in the diesel range (TPH-D), TPH in the oil range (TPH-O) into the Soil and Groundwater.
- Volatile Organic Compounds (VOCs) into the Soil and Groundwater.
- Metals into the Soil and Groundwater.

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology.

Please note that parcel(s) of real property associated with this Site are also located within the projected boundaries of the Morrells Dry Cleaning facility (Facility/Site ID #18489568). At this time, we have no information that those parcel(s) are actually affected. This opinion does not apply to any contamination associated with the Morrells Dry Cleaning facility (Morrell's).

Basis for the Opinion

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

1. Aspect Consulting, LLC (Aspect), **Focused Feasibility Study, Former Walker Chevrolet,** dated May 16, 2014.

2. Stemen Environmental, Inc. (Stemen), **Due Diligence Sampling for Walker Chevrolet, 633 Division Avenue, Tacoma, WA 98403,** dated August 2006.

3. Bison Environmental Northwest, Inc. (Bison), **Independent Remedial Action Report Summary and Disposal Certificate, Walker Chevrolet, 633 Division Avenue, Tacoma, WA,** dated December 7, 1994.

4. Bison, **Phase 2B Subsurface Sampling, Walker Chevrolet – Paint Booth, 633 Division Avenue, Tacoma, WA,** dated September 12, 1994.

5. Bison, **Phase 2 Studies, Floor Drain and Heating Oil UST Closure, Walker Chevrolet – Paint Booth, 633 Division Avenue, Tacoma, WA,** dated August 15, 1994.

6. Bison, **UST Removal Site Assessment and Independent Remedial Action Report for Walker Chevrolet, 633 Division Avenue, Tacoma, WA 98403,** dated August 1994.

7. Bison, **Phase I Environmental Site Assessment [ESA] and Independent Remedial Action Report for Walker Chevrolet, 633 Division Avenue, Tacoma, WA 98403,** dated August 1994.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in those documents is materially false or misleading.

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.

Ecology has determined your characterization of the Site is not sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A.**

The Site contains three tax parcels, one of which contains a triangular shaped building on a triangular-shape tax parcel. Businesses currently operating on the Site are a grocery store, an automobile service business, and an automobile collision repair business, all located within the one triangular tax parcel; associated paved parking for the business are located on the two remaining parcels. The Site is located at 633 Division Avenue and 100 North G Street in Tacoma, Washington (see Figure 1). Sanborn Maps and historical records identified former gas service station operations on Pierce County tax parcels 2030120032 (South Gas Station) and 2031130023 (North Gas Station) from at least 1926 to the 1950s. A heating-oil underground storage tank (UST) was also identified under the building on parcel 2030120032 (see Figures 1, E2, and E3). The heating-oil UST was also taken out of service in 1994. Between the North and South Gas Stations, the Site had ten USTs between them; those USTs were removed in 1994. Five environmental investigations have been completed on the Property.

A short occupational history of the Site indicates the Annie Wright Seminary was identified on tax parcel 2030120033 on the 1888 Sanborn map; in subsequent years, the school expanded into tax parcel 2030120032 until 1924 when the school moved to a new location (see Figure E1). Apparently, the school was demolished after 1924. The first occupant of the current building at 633 Division Avenue was the Allen Motor Company. The structure was built in 1925 and the Allen Motor Company opened its doors in February 1926. They sold Hudson-Essex and Studebakers. The Allen Motor Company built an annex at 629-31 Division Avenue in 1929. Walker Chevrolet moved into the original building in late 1933. The annex was later occupied by the Packard Tacoma Company, followed by the Bradley Motor Company. The section of this building at 618-20 North 1st St. was converted into the Stadium Market in 1931. Car Star Auto Body Repair, Titus-Will Service and Tire, and Stadium Thriftway currently operate on the Site.

Bison Investigations

On August 11, 1994, Bison produced an ESA for the Site; they identified the past and/or current hazardous and environmental handling practices that lead to the current environmental condition of the Site. The report identified the South Gas Station (SGS) located at the south end of parcel 2030120032, the Paint Booth also on 2030120032, and the North Gas Station (NGS) on tax parcel 2031130023. The SGS had seven USTs, the Paint Both had one UST, and NGS had three USTs.

On August 2, 1994, Bison began excavation and removal of the seven USTs at the SGS. There were three excavations at the SGS to remove the USTs, a pump island, and petroleum-contaminated soil (PCS). The maximum depth of excavations at the SGS was approximately

10 feet below ground surface (bgs). Laboratory analytical results of residual soil (Borings S-1 and S-7) indicated TPH-G were still above the current MTCA Method A Soil Cleanup Level (CUL) for Unrestricted Land Uses of 30 milligrams per kilogram (mg/kg). Benzene was also identified at the SGS location above the applicable MTCA Method A CUL of 0.03 mg/kg. Other PCS derivatives were also identified at the location; however, those constituents of concern (COCs) were either removed from the location or were below their applicable MTCA CULs.

Beginning on August 3 through September, 1994, Bison investigated the Paint Booth location. The maximum depth investigated was 10 feet bgs with a direct-push probe; however, the horizontal and vertical limits of the contamination had not been delineated. COCs identified above their applicable CULs at the following sampling locations were (see Figure B4, Table A, and Table B):

- B5-5' – methylene chloride;
- B5-7.5' – TPH-O;
- B5-9'– TPH-O;
- B5-10' – methylene chloride, tetrachloroethylene (PCE);
- B6-5' – TPH-G, benzene*, toluene, EDB (ethylene dibromide)*, TCE (trichloroethylene)*, and PCE*; and
- B1-5.5' – PCE, TCE*, EDB*, methylene chloride*, TPH-O, benzene*, toluene, total xylenes, and mercury*.

In addition to the fill port for the UST, there was also access to the UST through a floor sump; there were indications of unknown liquid material added to the UST at that access point and liquid material that had spilled to the floor and flowed into the sump. Two floor drains had excessive concentrations of TPHs, VOCs, and metals in the drain sediments. No contaminated soil was excavated from this location. The floor drains and sump were cleaned and sealed and the UST was decommissioned in place. Laboratory analytical results from sediments reclaimed from the drain lines indicated TPH, VOCs, and metals contamination well above applicable MTCA CULs; Bison recovered and disposed of those sediments. Bison estimated the extent of the contamination as a circle 14 feet in diameter from the center of the UST (see Figure B4).

On August 26, 1994, Bison began work on the NGS to excavate and remove three USTs and associated PCS. The maximum depth of the excavation at the SGS was approximately 20 feet. Laboratory analytical results indicated the highest TPH-O soil concentration was 21,000 mg/kg at 4 feet bgs and was excavated and removed from the Site. Additional analytical results of the extents of the excavation residual soil indicated all of the soil concentrations of the COCs at or below the applicable CULs had been excavated and removed (see Figures B1 and B2).

* The laboratory reporting limit for the COC did not resolve down to the applicable MTCA CUL; the COC is presumed to be present.

Stemen Investigations

Starting in September 2006 until May 2007, Stemen conducted five soil and groundwater investigations of the Site. The limited soil sample results and the ambiguous and confusing report narrative for the investigation at the NGS appeared to indicate the PCS had been excavated and removed from the Site during the original 1994 UST decommissioning and removal (earlier sampling results from the 1994 UST decommissioning had already confirmed that). A monitoring well, MW-3, was installed to a depth of 67 feet bgs. Three attempts to measure groundwater at MW-3 did not indicate any measurable groundwater on tax parcel 2031130023.

Stemen also advanced direct-push probes at the former SGS location. The deepest advance completed at the SGS was 16 feet bgs at S-7. Stemen found TPH-G above its MTCA Method A CUL at S-7 and at S-1 at 15 feet bgs; analytical results indicated the maximum TPH-G concentration was 920 mg/kg, there was no reported analysis above the 15 feet bgs depth at that location nor were there any field descriptions or boring logs presented for review (see Figure S1 and Table S1). Analytical results also indicated benzene and total xylenes were above their applicable MTCA Soil CULs at S-1.

Stemen further identified issues with the Paint Booth location. The Stemen report reconfirmed soil contamination in the narrative as well as reported new soil contamination results; however, the Stemen report only contained partial analytical data to substantiate the new contamination claim. In 1996, soil analytical results indicated arsenic above its MTCA Method A CUL level of 20 mg/kg under the floor slab at 4 feet and 8 feet bgs. In May 2008, Stemen did provide some analytical data to indicate that the sub-slab soil vapor concentrations were above the screening levels for PCE at three locations (GV-1, GV-2, and GV-3). The highest PCE soil vapor concentration was 1,000 micrograms per cubic meter ($\mu g/m^3$), the PCE soil gas screening level is 4 $\mu g/m^3$ (see Figure S2 and Table 1-5).

Starting in January 2007 until January 2008, Stemen installed eight monitoring wells (MW-1 through MW-8); MW-1, MW-3, and MW-5 were installed on the Site. The other wells were part of the Morrell's investigation, which was happening concurrently. Stemen sampled the three Site wells for VOCs; PCE and benzene were identified in MW-1 at groundwater concentrations below the applicable MTCA Method A Groundwater CULs in August 2007. Subsequent sample results indicated that no VOC was identified above its applicable laboratory reporting limit. The Stemen groundwater investigation of the Site did not indicate any COCs above their applicable MTCA Method A or Method B CULs (see Table 1-3).

Aspect Investigations

In October 2008, Aspect began groundwater investigations of the Site concurrently with the Morrell's site. After four, nonconsecutive sampling events, analytical results from MW-1 indicated that groundwater was not impacted at the SGS. MW-3 never had measurable groundwater and was abandoned sometime after May 2009; no additional work was done at the NGS. MW-11 was installed in May 2008 at the former Paint Booth/UST location to a

depth of 70 feet bgs; apparently neither soil analytical evaluation nor field evaluation of soil vapors were completed at that location during the well install and no additional evaluation of the soil at that location was reported. Laboratory analytical results at MW-5 indicated groundwater concentrations of PCE and TCE above their respective MTCA Method A CULs of 5 micrograms per liter (µg/L). Carbon tetrachloride (CT) was also present above its Method B Cancer CUL of 0.6 µg/L (see Figure 1 and Table 1-3).

In December 2013, Aspect advanced one boring at AB-1 on the SGS location using a hollow stem auger to 61.5 feet bgs (see Figure 1). Analytical results from AB-1 at 15 feet bgs indicated that TPH-G was still present at that location with a soil concentration of 37 mg/kg, just exceeding the MTCA Method A CUL for TPH-G; TPH-G was still detected at that location at the 25 feet bgs depth below the MTCA CUL. Field parameters above the 15-foot depth location at AB-1 seemed to indicate little evidence of residual soil above that depth; however, field observations indicated elevated soil vapors down to 20 feet bgs.

In January 2014, Aspect conducted an evaluation of the sub-slab soil vapor and indoor air at the Paint Booth/UST location and in the produce cooler, respectively; the sub-slab sample was collected just outside the building footprint under the sidewalk (see Figure 1). An outdoor ambient air sample was also collected outside the building; that sample was also above the PCE soil gas concentration screening level (see Table 1-5). The indoor air sample was collected in the produce cooler; the PCE indoor air concentration was 0.61 µg/m^3, the MTCA Method B air CUL for cancer risk is 9.6 µg/m^3. Aspect concluded the PCE indoor air concentrations were substantially below the applicable CUL.

During their investigations of the Site, Aspect concluded the Site had been sufficiently delineated to meet the substantive requirements of MTCA. In May 2014, Aspect prepared a focused feasibility study and disproportionate cost analysis for a Site remedy. Aspect presented four alternatives:

- Alternative 1 – No Additional Action.
- Alternative 2 – Institutional Controls.
- Alternative 3 – Soil Vapor Extraction for Former Paint Booth and
- Alternative 4 – Permanent Cleanup.

Aspect recommended Alternative 2 as the non-permanent remedy for the Site.

Based on a review of the available information, **Ecology does not concur with Aspect's conclusion the Site has been fully delineated and is ready to select and conduct any of their proposed remedial alternatives.** Ecology has the following comments:

1. The original tax parcel numbers for the Site were 2030120040 and 2031130023; sometime after entry into the Voluntary Cleanup Program (VCP) in 2009; Pierce County noted that parcel number 2030120040 subdivided into tax parcel numbers 2030120032 and 2030120033; there are no current references to 2030120040. **Ecology has determined tax parcel 2030120033 should be associated with the Morrell's site** as

laboratory analytical results indicate the soil and groundwater contamination on that parcel appears to be associated with Morrell's.

2. **Ecology determined the TPH soil contamination on the former NGS (tax parcel 2031130023) had been fully delineated and that contamination had been removed in 1994.** The source of the soil contamination appeared to originate solely from the NGS operations and was not associated with the soil and groundwater contamination on the other two tax parcels. While the groundwater table had not been located at the NGS, the soil analytical results, soil boring logs, and well logs indicated TPH soil contamination had been vertically separated from the groundwater table by at least 40 feet in very tight soils and would have been unlikely to impact the Site groundwater. Ecology determined this tax parcel could be eligible for an unencumbered, Property-specific No Further Action opinion separately from the other two tax parcels.

3. The chemical **1,4-dioxane** has been identified as a probable human carcinogen and has been associated with dry cleaning sites. **This chemical has not been evaluated at the Site**; it is considered a possible COC for the Site. **Ecology will require an evaluation for the presence of 1,4-dioxane for air, groundwater, soil, and soil vapor and should be added to the required COC analyses listed below.** For groundwater analysis, use the low detection level method modified EPA 8270 with liquid-liquid extraction and isotope dilution by capillary column gas chromatography-mass spectrometry (GC-MS). This GC-MS method is optimized for 1,4-dioxane as a single analyte. The MTCA 1,4-dioxane Method B CULs are 0.438 µg/L, 1 mg/kg, and 0.5 $\mu g/m^3$ for groundwater, soil, and air, respectively.

4. **Ecology determined the soil contamination on the former SGS (tax parcel 2030120032) had not been fully delineated and that contamination had not been completely removed in 1994.** The source of the TPH soil contamination appeared to originate solely from the SGS operations and was not associated with the soil and groundwater contamination on the other two tax parcels. Groundwater was evaluated for the SGS and laboratory analytical results indicated that the media had not been impacted by residual PCS; however, there was only one groundwater detection for PCE below the MTCA PCE Method A CUL at the well in August 2007 and one TCE detection below its MTCA CUL in January 2014. There were no detected chlorinated solvent detections in the SGS soil. The full horizontal and vertical extent of the SGS PCS east of AB-1, south of S-1, and west of S-7, has not been determined. Field indicators at AB-1 indicate impacted soils to a depth of approximately 20 feet bgs. AB-1 was meant to further describe the condition below the former UST excavation; however, it does not appear to be within the former UST excavations and it did nothing to further delineate the soil profiles at S-1 and S-7, which are at least 25 feet south from the AB-1 location. The vertical and horizontal extent of the PCS needs to be established for the SGS location.

5. **Ecology has determined the soil contamination at the former Paint Booth/UST location (tax parcel 2030120032) had not been fully delineated and that the PCS and VOC-contaminated soil was not removed in 1994.** Soil analytical results from the

UST area indicated that TPH and chlorinated VOCs above their applicable MTCA CULs were found to at least a depth of 10 feet bgs. The conceptual Site model was inadequate, there was little to no relational or spatial depiction or description of the Site structures to sources of contamination and integrated with all the Site investigation current and historical data to complete a three-dimensional model of the Site. The vertical and horizontal extent of the metals, PCS and VOC-contaminated soil needs to be established for the SGS location.

6. **The groundwater evaluation at the Paint Booth/UST location (MW-11) is not sufficient to establish whether any impacts and/or trends to the groundwater at that location can be made.** At least four consecutive quarters of groundwater analytical data are required and Ecology concurrence to terminate Stage 2 Monitoring at a location. Only three nonconsecutive events have been completed, of which one sample result had a TCE concentration statistically equal to the TCE CUL. **Additional groundwater sampling will be required at MW-11. The COCs for groundwater shall be TPH-G, TPH-D, TPH-O, VOCs, chlorinated VOCs, EDB via EPA 8011, and total metals.** At least four quarters of groundwater analytical data indicating all COC groundwater concentrations were below the COC's applicable MTCA Method A CUL would be needed before Ecology would consider Site closure.

7. **The sub-slab soil vapor evaluation and indoor air evaluation at the Paint Booth/UST location were inadequate to provide any meaningful conclusions about the risk of soil vapor intrusion into the building.** The singular indoor air sample was collected from a produce cooler (a room with limited human occupancy for brief periods of time) that was reported to have been built upon the former Paint Booth/UST. No information was provided as to the integrity of the cooler, or for the building's slab floor in general. The cooler is semi-pressurized and contains colder, denser air; not an ideal locale to evaluate soil vapor intrusion. Ecology guidance indicates that indoor sub-slab soil vapor samples need to be collected from within the footprint of the building in the contamination source area. Ecology has determined that a high-risk area such as a continuous work area and public areas are more appropriate locations to sample indoor air. The sub-slab soil vapor should be evaluated in the produce cooler staging area and likewise with the indoor air; there are several floor drains in the area around the meat and produce coolers that are potential soil vapor conduits. Also, there is a substantial asphalt cap between the Morrell's site and the Bruce Titus Chevrolet Site; this cap may provide a subsurface pathway for the soil vapor between the two Sites and should be evaluated. Potential preferential pathways (sewer lines) for soil vapor exist in North First Street that could connect Morrell's with the Site (see Figure E04). The sub-slab soil vapor has not been evaluated near the interior north corner of the Thriftway Supermarket; Ecology has determined that location needs be evaluated also. **The COCs for soil vapor shall be air-phase hydrocarbons (APH), VOCs, and chlorinated VOCs.**

8. **This is a complex Site; the conceptual Site model was inadequate to the task of describing the affected media, the types of contamination, pathways, and where that contamination has come to lie at this Site.** There was little to no relational, spatial

depiction, or a description of the Site structures to Site contamination sources integrated with all the current and historical Site investigation data of all media to complete an inclusive, three-dimensional model of the Site and the potential receptors. The intent of the (additional) samples must be clear to the reviewer, whether it was meant for delineation, confirmation, or performance purposes. Maps and diagrams must be accurate and depict map details and relationships (both current and historical) as they occur; no such figure or diagram of compiled data from all the investigations was submitted to Ecology for review. Ecology cannot make accurate interpretations of the Site cleanup from descriptions that are inaccurate or misrepresented relationships.

9. **No analytical data has been submitted into Ecology's electronic database to date for this Site.** In accordance with *WAC 173-340-840(5)* and Ecology Toxics Cleanup Program *Policy 840 (Data Submittal Requirements)*, all data generated for Independent Remedial Actions shall be submitted simultaneously in both a written and electronic format. For additional information regarding electronic format requirements, see the website http://www.ecy.wa.gov/eim. Be advised that according to the policy, any reports containing sampling data that are submitted for Ecology review are considered incomplete until the electronic data has been entered. Please ensure that data generated during on-site activities is submitted pursuant to this policy. **Data must be submitted to Ecology in this format for Ecology to issue a No Further Action determination.** Please be sure to submit all soil and groundwater data collected to date, as well as any future data, in this format. Data collected prior to August 2005 (effective date of this policy) is not required to be submitted; however, you are encouraged to do so if it is available. Be advised that Ecology requires up to two weeks to process the data once it is received.

2. **Establishment of cleanup standards.**

Ecology has determined the cleanup levels and points of compliance you established for the Site do not meet the substantive requirements of MTCA.

The Site has not been fully delineated. Applicable MTCA Method A and Method B CULs for air, groundwater, soil, and soil vapor shall be used to characterize the Site. Standard points of compliance are being used for the Site. The point of compliance for protection of groundwater shall be established in the soils throughout the Site. 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 shall be established in the soils throughout the Site from the ground surface to 15 feet bgs. In addition, the point of compliance for the groundwater shall be established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site. For indoor air, cleanup levels to protect air quality shall be based on estimates of the reasonable maximum exposure expected to occur under both current and future Site conditions and MTCA Method B indoor air quality CULs shall be used.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site does not meet the substantive requirements of MTCA.

The affected Site media must be fully characterized prior to selecting any final cleanup action. Remedial activities have not been completed at the Site. For a Site cleanup action to qualify for a no further action opinion, it must meet one or more of the minimum cleanup requirements in WAC 173-340-360(2). MTCA requires the use of permanent solutions to the maximum extent practicable. As some cleanup activities have been conducted on the Site that has not led to a permanent cleanup solution; Aspect completed a feasibility study. **Ecology has determined selection and implementation an alternative from the feasibility study for the Site is premature, additional characterization will be needed.**

4. Cleanup.

Ecology has determined the cleanup you performed does not meet any cleanup standards at the Site.

The Site has not been fully characterized. In August 1994, Bison reported that they collected 132 gallons of sludge and 300 gallons of blended fuel and transported the waste to Fife Sand and Gravel for disposal. Seven USTs were also decommissioned and taken to Fife Sand and Gravel for disposal. And in November 1994, 406 cubic yards of PCS were excavated and taken to Fife Sand and Gravel to be bio-remediated to below applicable MTCA CULs. The soils were reported as remediated and ready for reuse.

Additional Site characterization work was completed at the Site in the intervening years; however, the Site has not been fully delineated and the Site characterization has not been completed. No remedy can be selected and applied to the Site until it has been fully delineated.

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. 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 and WAC 173-340-545.

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).

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 web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion, please contact me by phone at (360) 407-7404 or e-mail at erad461@ecy.wa.gov.

Sincerely,

Eugene Radcliff, L.G.
Site Manager
SWRO Toxics Cleanup Program

GER/ksc: SW1040 FA Opinion 11172014

Enclosures (17): A – Description and Diagrams of the Site

Figure 1 2009	Site Vicinity Map
Figure 1	Site Map Former Walker Chevrolet (FFS)
Figure E1	Tacoma 1888 Sanborn Map
Figure E2	Tacoma 1912-Apr. 1950 Sanborn Map
Figure E3	North Gas Station
Figure E04	Morrell's Potential Pathways
Figure B1	NGS Soil Sample Locations
Figure B2	Additional NGS Soil Sample Locations

Figure B3	SGS Soil Sample Locations
Figure B4	Paint Booth
Figure S1	Stemen Soil Investigation
Figure S2	Stemen Soil Gas Investigation
Table 1-3	Concentrations of Volatile Organic Compounds in Groundwater
Table 1-5	Indoor, Ambient, and Sub-Slab Air Sample Results near Former Paint Booth
Table A	Laboratory Results – Previous Study
Table B	Laboratory Results – Test Borings
Table S1	Stemen Soil Investigation

By certified mail: (91 7199 9991 7031 7908 4955

cc: David C. and Barbara Shaw
Darrel E. and Lois J. Wickham Revocable Trust
Zona M. Wickham, c/o Todd Wickham
Mr. Rob Olsen, Tacoma-Pierce County Health Department
Scott Rose – Ecology
Ms. Carol Johnston – Ecology
Ms. Dolores Mitchell – Ecology (without enclosures)

Enclosure A

Description and Diagrams of the Site

Site Description

Media of Concern: Soil, Soil Vapor Pathway, and Groundwater

The Bruce Titus Chevrolet (Site) is located at 633 Division Avenue in Tacoma, Pierce County, Washington (see Figure 1 2009)). The Site has been zoned for commercial purposes and has been used as a boarding school since at least the 1888, and a car dealership and automotive maintenance shop since at least 1912 (see Figures E1 and E2). The Site is composed of three parcels encompassing approximately 1.22 acres and has one 48,055 square foot, two-story brick building, built in 1925. The Site is currently operated as a grocery store and an automobile body repair shop on the first floor and an automobile service business on the second floor. The Site is bordered on the north and west by commercial buildings, on the east by building zoned as *Downtown Residential,* and on the south by Wright Park, zoned as *Two Family Dwelling*[1]. The Site elevation is approximately 280 feet above sea level and the topography of the Site slopes downhill from the south, decreasing in elevation north of the Site. The Pierce County Assessor-Treasurer's Office[2] (PCATO) notes the Site has assigned tax parcel numbers of 2031130023, 2031130032, and 2030120033.

The PCATO notes the legal description for the applicable parcels as follows:

- **Parcel Number: 2031130023 (Parking):** - Section 32 Township 21 Range 03 Quarter 42 : THAT POR B 3113 DESC AS FOLL BEG SELY COR SD BLK TH NLY ALG ELY LI SD BLK 90 FT TH WLY PAR/W NLY LI SD BLK 90 FT TH SLY PAR/W ELY LI SD BLK 90 FT TO S LI SD BLK TH ELY ALG SD S LI 90 FT TO POB NW OF SE 32-21-03E APPROX 8100 SQ FT OUT OF 002-1 SEG N-1271 SG EMS
  Use Code: 6410-AUTO REPAIR SERVICES.
- **Parcel Number: 2031130032 (Location of Building):** - Section 32 Township 21 Range 03 Quarter 42 NEW TACOMA PARCEL B OF ROS FOR BLA 2013-07-09-5003 THAT POR OF B 3013 & 3014 TOG/W THAT POR OF N G ST LY BET SD B 3013 & 3014 VAC BY ORD 65 ALSO TOG/W THAT VAC POR OF SELY 5.2 FT OF N 1ST ST LY NWLY OF & ABUTT L 1 B 3013 AS VAC BY ORD 25654 LY SWLY OF FOLL DESC LI COM AT MOST NLY COR OF SD B 3013 TH ALG MAR OF N 1ST ST AS VAC BY SD ORD 25654 N 63 DEG 01 MIN 48 SEC W 5.2 FT TH CONT ALG SD MAR S 27 DEG 00 MIN 49 SEC W 16.42 FT TO POB TH S 63 DEG 01 MIN 48 SEC E 28.21 FT TH S 10 DEG 23 MIN 24 SEC E 18.28 FT TH S 62 DEG 54 MIN 47 SEC E 107.48 FT TH N 27 DEG 59 MIN 16 SEC E 31.18 FT TO N LI OF AFORESAID B 3013 TH S 63 DEG 01 MIN 48 SEC E 45.86 FT TO NE COR OF AFORESAID B 3013 & TERMINUS OF DESC LI OUT OF 004-0 SEG 2014-0106 JP 08/29/13 JP
  Use Code: 6410-AUTO REPAIR SERVICES
- **Parcel Number: 2030120033 (Parking):** - Section 32 Township 21 Range 03 Quarter 42 NEW TACOMA PARCEL C OF ROS FOR BLA 2013-07-09-5003 THAT POR OF B 3012 & 3013 TOG/W THAT POR OF ALLEY LY BET SD B 3012 & 3013 VAC BY ORD 106 ALSO TOG/W THAT VAC POR OF SELY 5.2 FT OF N 1ST ST LY NWLY OF & ABUTT L 1 B 3013 VAC BY ORD 25654 LY NELY OF FOLL DESC LI COM AT MOST NLY COR OF SD B 3013 TH ALG MAR OF N 1ST ST AS VAC BY SD ORD 25654 N 63 DEG 01 MIN 48 SEC W 5.2 FT TH CONT ALG SD MAR S 27 DEG 00 MIN 49 SEC W 16.42 FT

[1] http://www.govme.org/gMap/MGMain.aspx
[2] http://epip.co.pierce.wa.us/CFApps/atr/epip/summary.cfm?parcel=4715010391

TO POB TH S 63 DEG 01 MIN 48 SEC E 28.21 FT TH S 10 DEG 23 MIN 24 SEC E 18.28 FT TH S 62 DEG 54 MIN 47 SEC E 107.48 FT TH N 27 DEG 59 MIN 16 SEC E 31.18 FT TO N LI OF AFORESAID B 3013 TH S 63 DEG 01 MIN 48 SEC E 45.86 FT TO NE COR OF AFORESAID B 3013 & TERMINUS OF DESC LI EXC FOLL DESC PROP BEG AT MOST NLY COR OF B 3012 TH ON WLY LI OF SD B S 25 DEG 30 MIN W 78.8 FT TH PAR TO NLY LI OF SD B S 64 DEG 30 MIN E 179.56 FT TH S 76 DEG 07 MIN E 58.74 FT TO ELY LI OF SD B TH N 53 DEG 20 MIN E 75.71 FT TH N 64 DEG 30 MIN W 272.49 FT TO POB ALSO EXC FOLL DESC PROP COM AT MOST NLY COR OF AFORESAID B 3012 TH SWLY ALG NWLY LI OF AFORESAID B 3012 78.8 FT TO POB TH CONT SWLY ALG NWLY LI OF AFORESAID B 3012 & SWLY EXT 61 FT TH SELY PAR TO NELY LI OF AFORESAID B 3012 130 FT TH NELY PAR TO NWLY LI OF AFORESAID B 3012 61 FT TH NWLY 130 FT TO POB OUT OF 004-0 SEG 2014-0106 JP 08/29/13 JP
Use Code: 9170-COMM VAC LAND.

The City of Tacoma[3] has zoned the tax parcels as NCX - Neighborhood Commercial Mixed-Use.

The Site entered the Voluntary Cleanup Program (VCP) in August 2009 and was originally associated with the adjacent Morrell's Dry Cleaning facility (Facility /Site ID #18489568). That site involves a dry cleaning business and cleanup of chlorinated solvents in the soil and groundwater.

Previous investigations have attributed the Site soil and groundwater contamination to historic automotive refueling and repair operation. Ecology has determined the analytical data from the two cleanup sites does not conclusively indicate, one way or another, whether the groundwater contamination from the two sites is comingled. There are several public and private sanitary and storm sewer lines that are located in the street to the west of the Site Property and may be potential pathways for contamination.

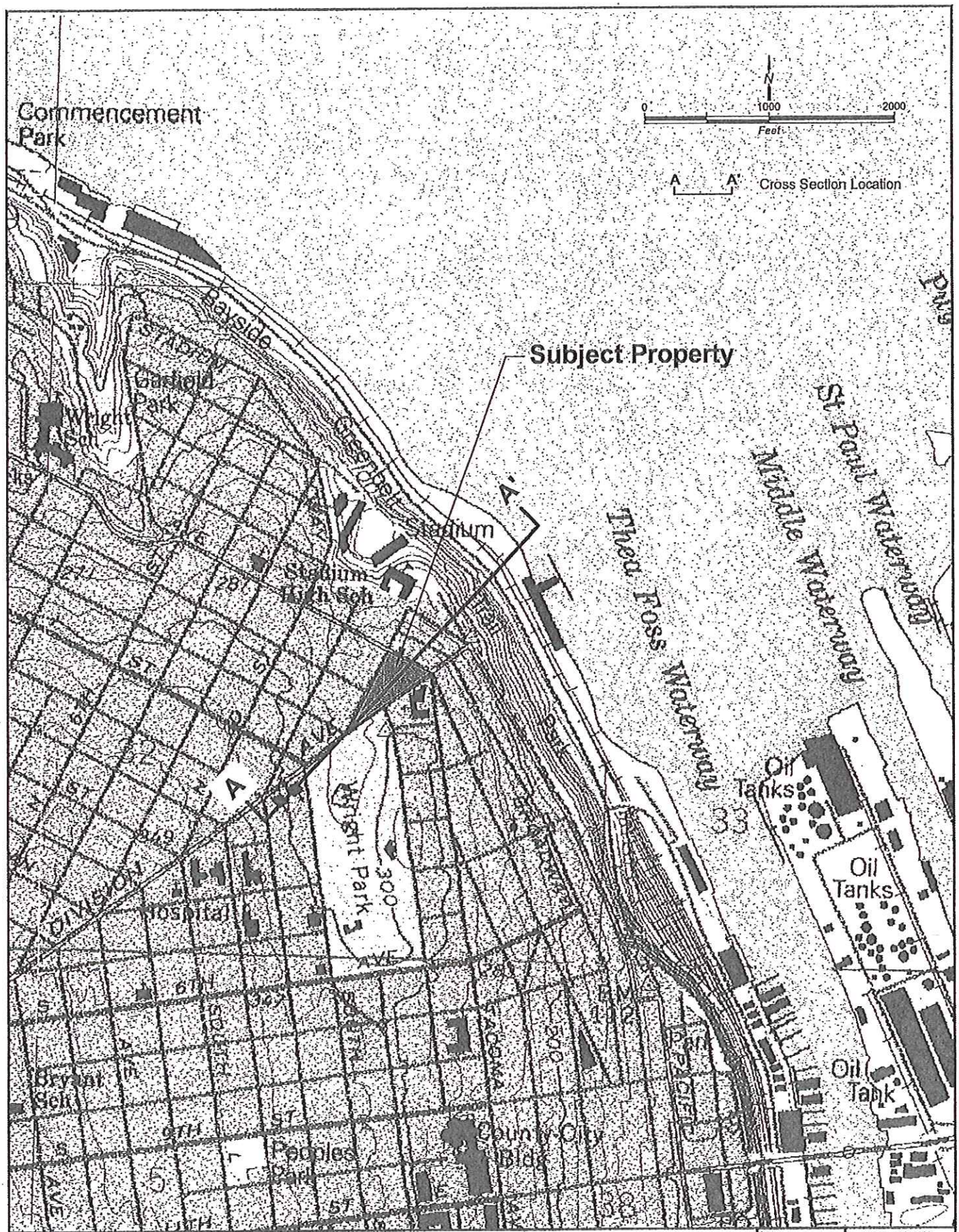
The Site lies in north Tacoma on top of ice-contact deposits composed of intermixed outwash, lacustrine beds, and glacial till; brown and gray to lightly oxidized in color. Ice-contact deposits of Pleistocene age commonly occur as outwash with lenses and pods of till and lacustrine deposits. Outwash deposits consist of stratified fluvial sand and gravel, commonly silty, with cobbles and boulders; generally medium to very dense and moderately to well-sorted. Lacustrine deposits consist of interbedded fine sand and silt to laminated silt and clay; loose to medium dense. Glacial till consists of a diamict with sand, silt, and gravel lenses; loose to very dense. Till is silt-sand matrix-supported diamict of gravel with cobbles and boulders. Earlier Quaternary-age continental sedimentary deposits lie below the tills[4].

Groundwater ranges from approximately 52 feet below ground surface (bgs) to 54 feet bgs. No water supply wells were reported within 0.5 miles of the Site. Based on the limited geologic data for the Site, there appears to be an impermeable interbedded silt and silty sands layers approximately 60 feet bgs that results in a shallow aquifer. That impermeable layer appears to end near the western and northern edges of the Site and the geology provides a window to the deeper aquifer table, approximately 113 feet to 145 feet bgs. The limited groundwater elevation data for the shallow aquifer indicate the gradient to be to the northeast but also indicates the deeper aquifer gradient to be

[3] http://govme.org/govME05/MyTacoma/MyTacoma.aspx?Parcel=4715010391
[4] https://fortress.wa.gov/dnr/geology/

to the northwest. Most of the land around the Site is well developed and covered with impervious surfaces with the notable exception of Wright Park one block south of the Site, which may be a source of groundwater recharge.

Humans are the likely sensitive receptors susceptible to the VOC contamination from vapors escaping the soil pathway. There are no known natural sensitive receptors in the area. The available laboratory analytical data indicates the petroleum soil-to-groundwater contamination pathway is not complete and therefore presents a low risk to the environment and to human health and safety; however, the chlorinated solvent soil-to-groundwater contamination pathway is complete. Also, the sub-slab soil vapor-to-indoor air pathway appears to be complete.



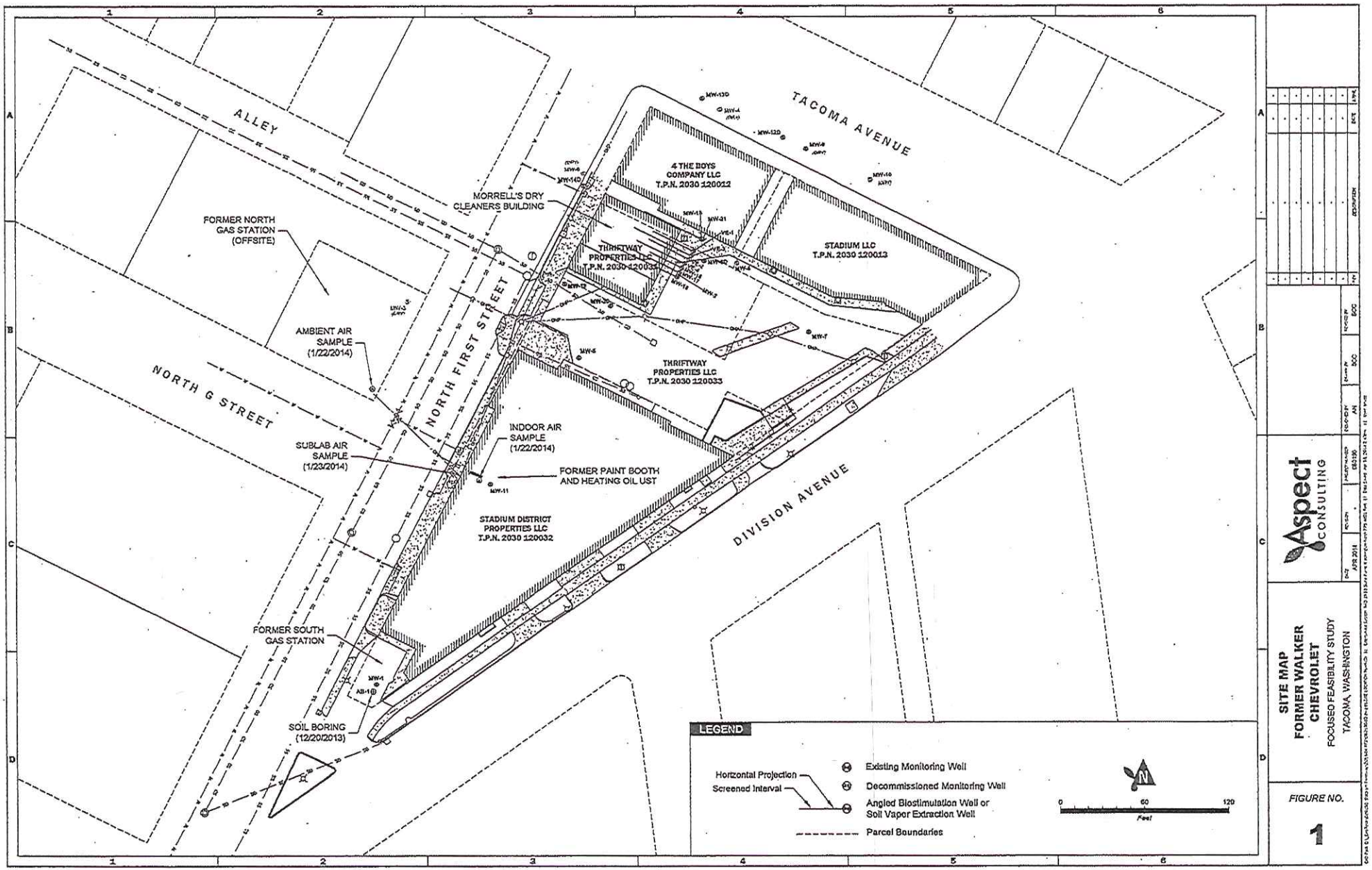
Site Vicinity Map

Former Walker Chevrolet Property
Tacoma, Washington

Aspect consulting
earth+water
www.aspectconsulting.com
a limited liability company

DATE: June 2009	PROJECT NO. 080190
DESIGNED BY: SCC	
DRAWN BY: SCC	FIGURE NO. 1
REVISED BY: -	

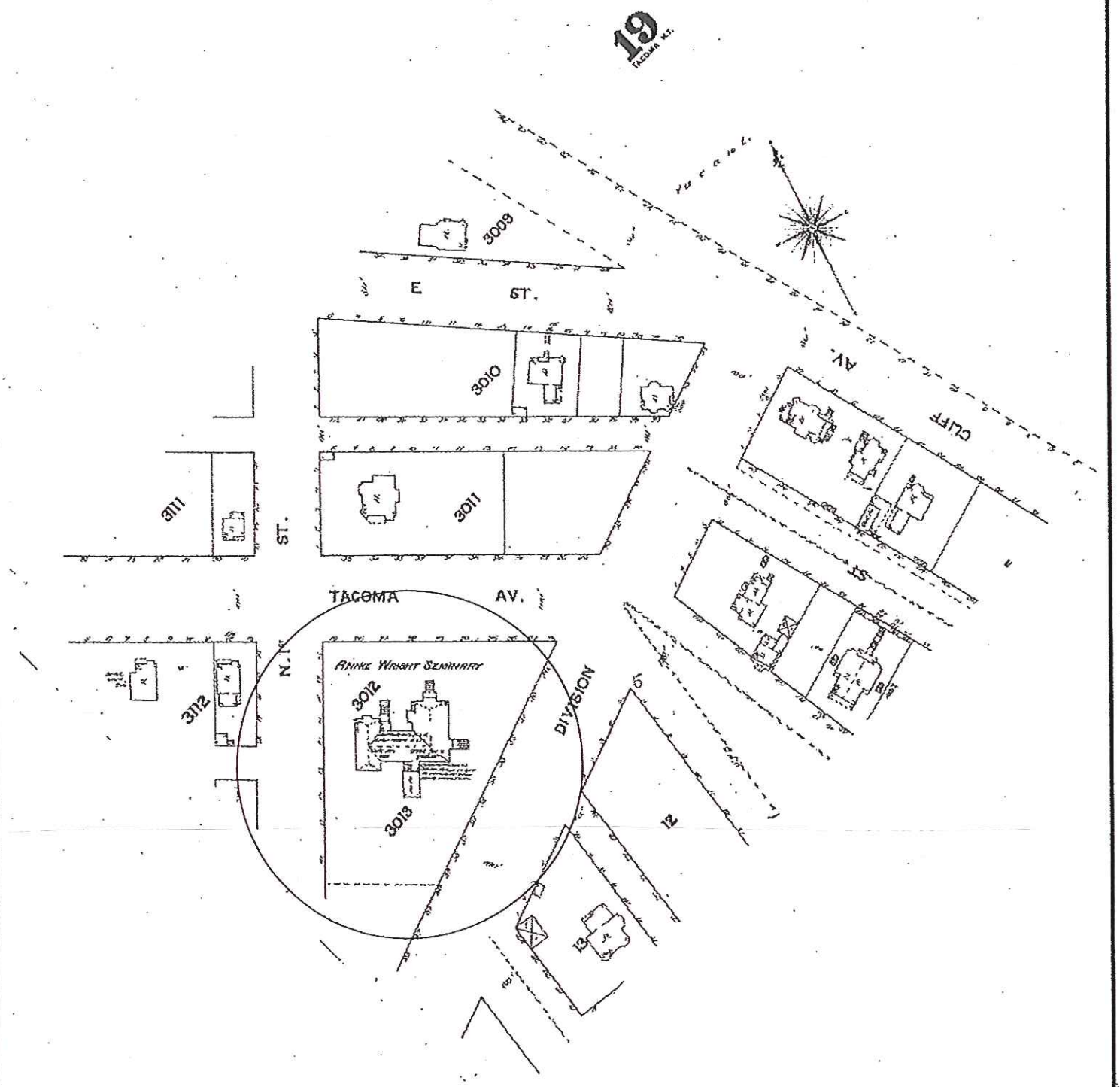
Q:_GeoTech\090190 Stadium Thriftway\2009-06\080190-01.dwg



Aspect CONSULTING

SITE MAP
FORMER WALKER CHEVROLET
FOCUSED FEASIBILITY STUDY
TACOMA, WASHINGTON

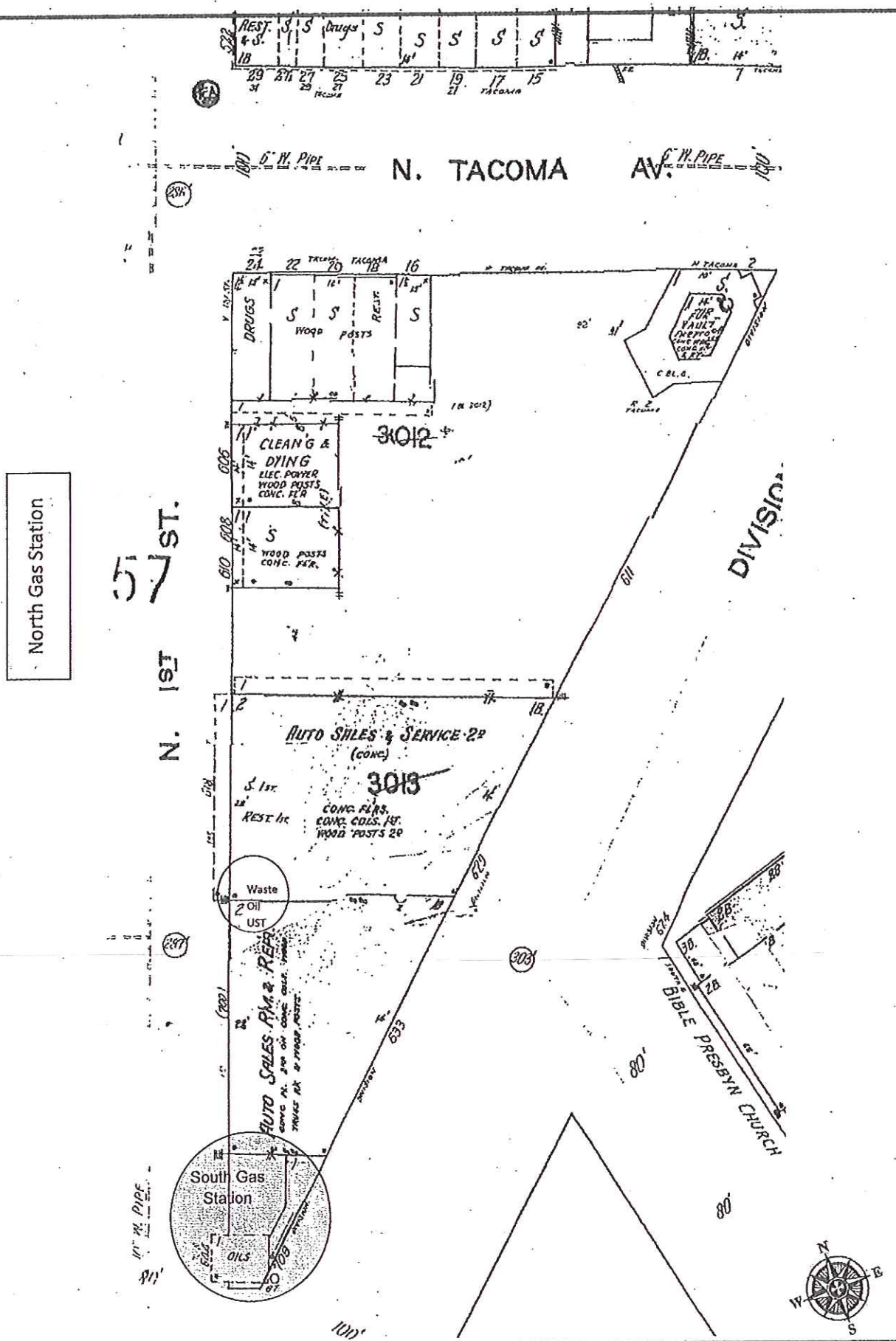
FIGURE NO.
1



Bruce Titus Chevrolet Site - SW1040

From Tacoma 1888 Sanborn Map

Figure E1

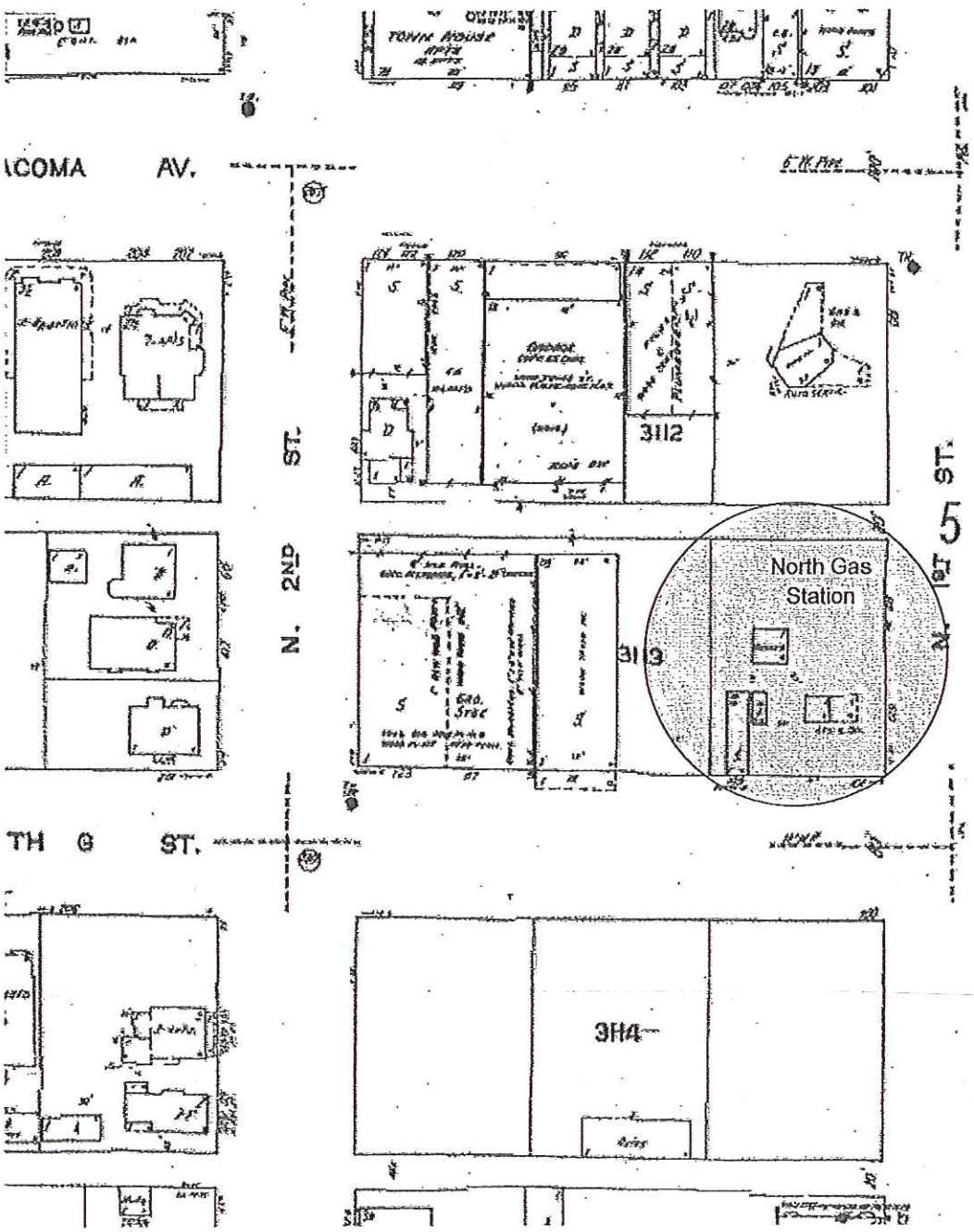


Bruce Titus Chevrolet Site - SW1040

From Tacoma 1912-Apr. 1950 Sanborn Map

vol.1, 1912-Jan. 1950

Figure E2



Titus Will Building

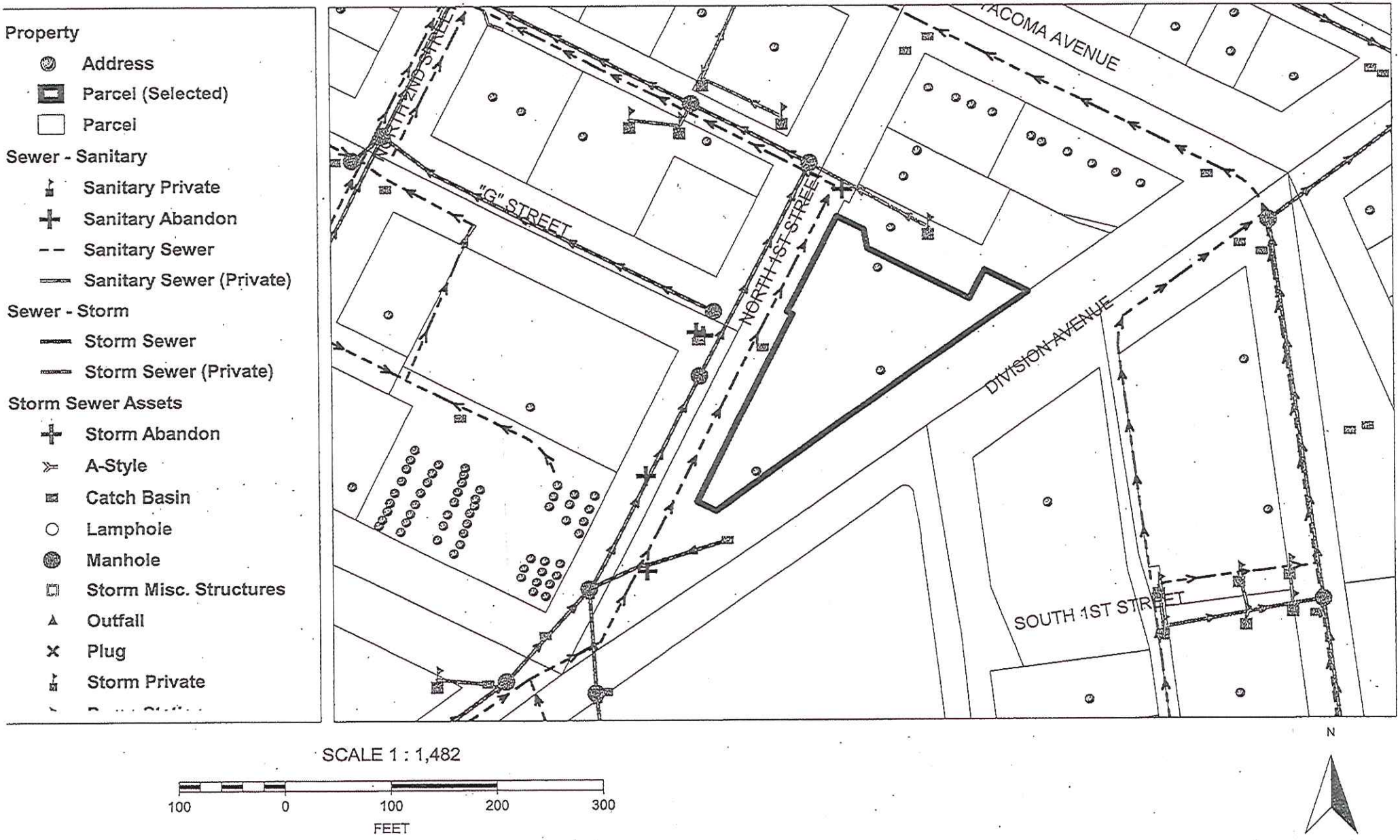
Bruce Titus Chevrolet Site - SW1040

North Gas Station

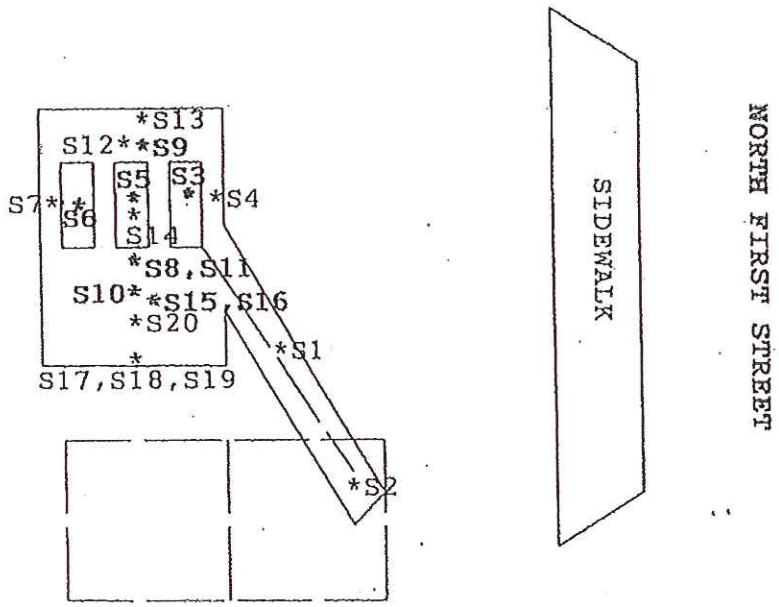
From Tacoma 1912-Apr. 1950 Sanborn Map, vol. 1, 1912-Jan. 1950

Figure E3

Morrell's Potential Pathways - Figure E04



Friday, October 31, 2014 2:01 PM



SCALE

0 10' 20'

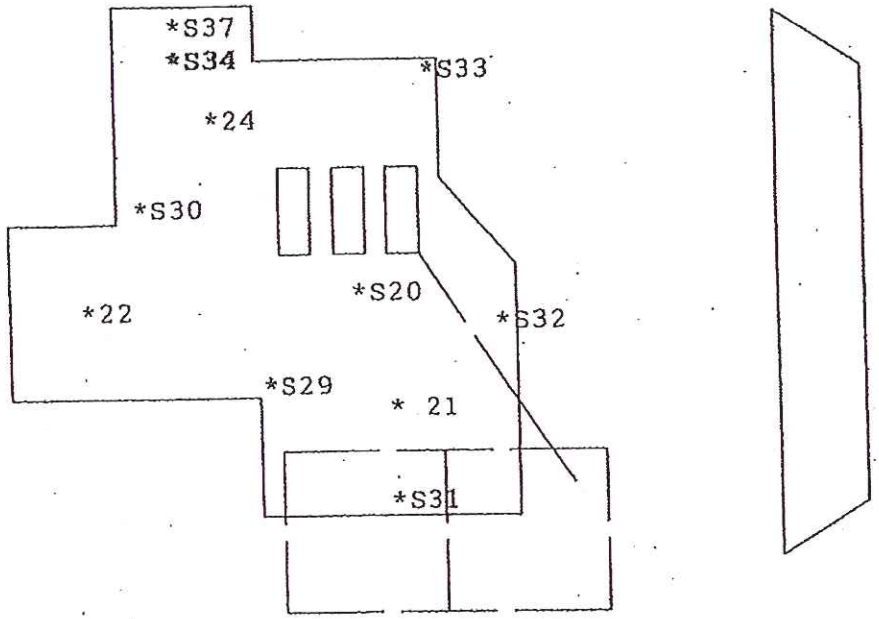
KEY

*S3 Sample Location- Contaminated Soil (removed)

*S18 Sample Location- "Clean" Soil

SITE PLAN - NORTH LOT on 9/2/94
BISON ENVIRONMENTAL NORTHWEST, INC.
PROJECT# 94481-3 SEPT 1994

Figure B1 - NGS Soil Sample Locations



SCALE

0 10' 20'

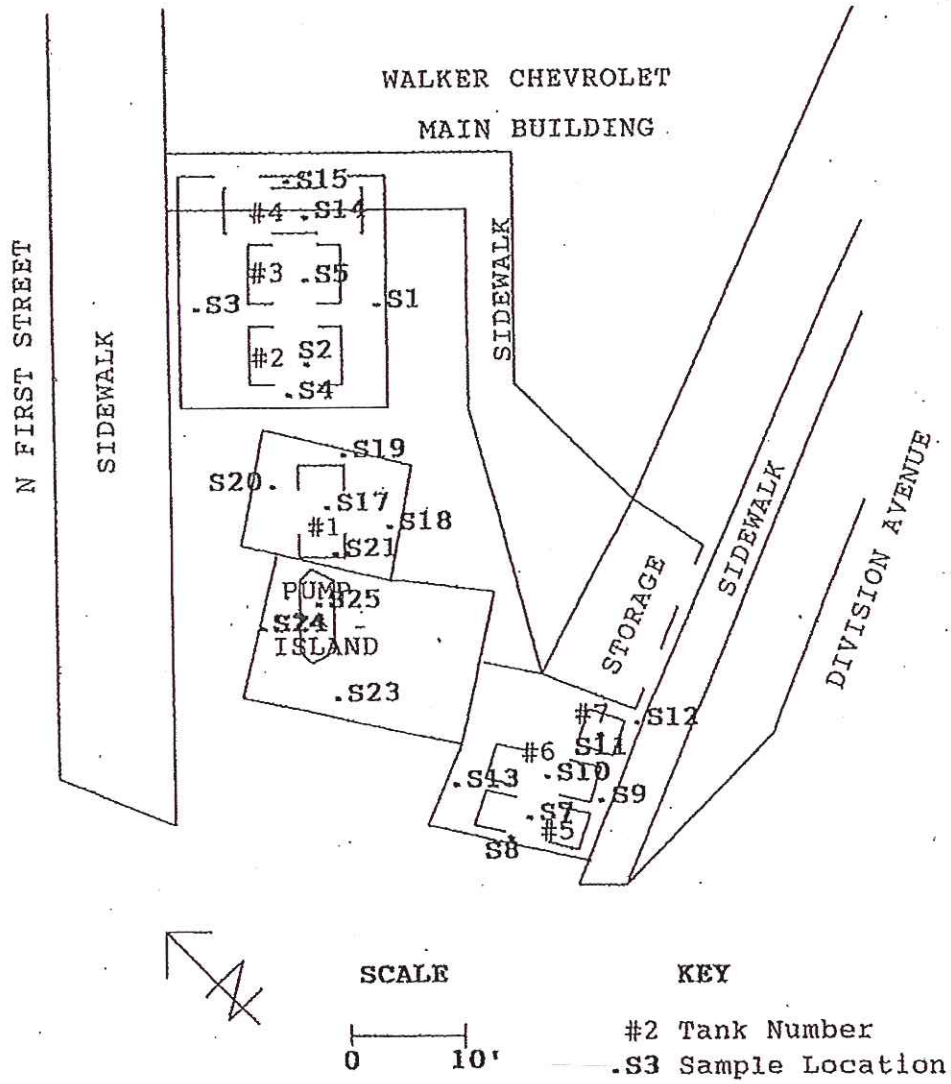
KEY

*S34 Sample Location- Contaminated Soil (removed)

*S21 Sample Location- "Clean" Soil

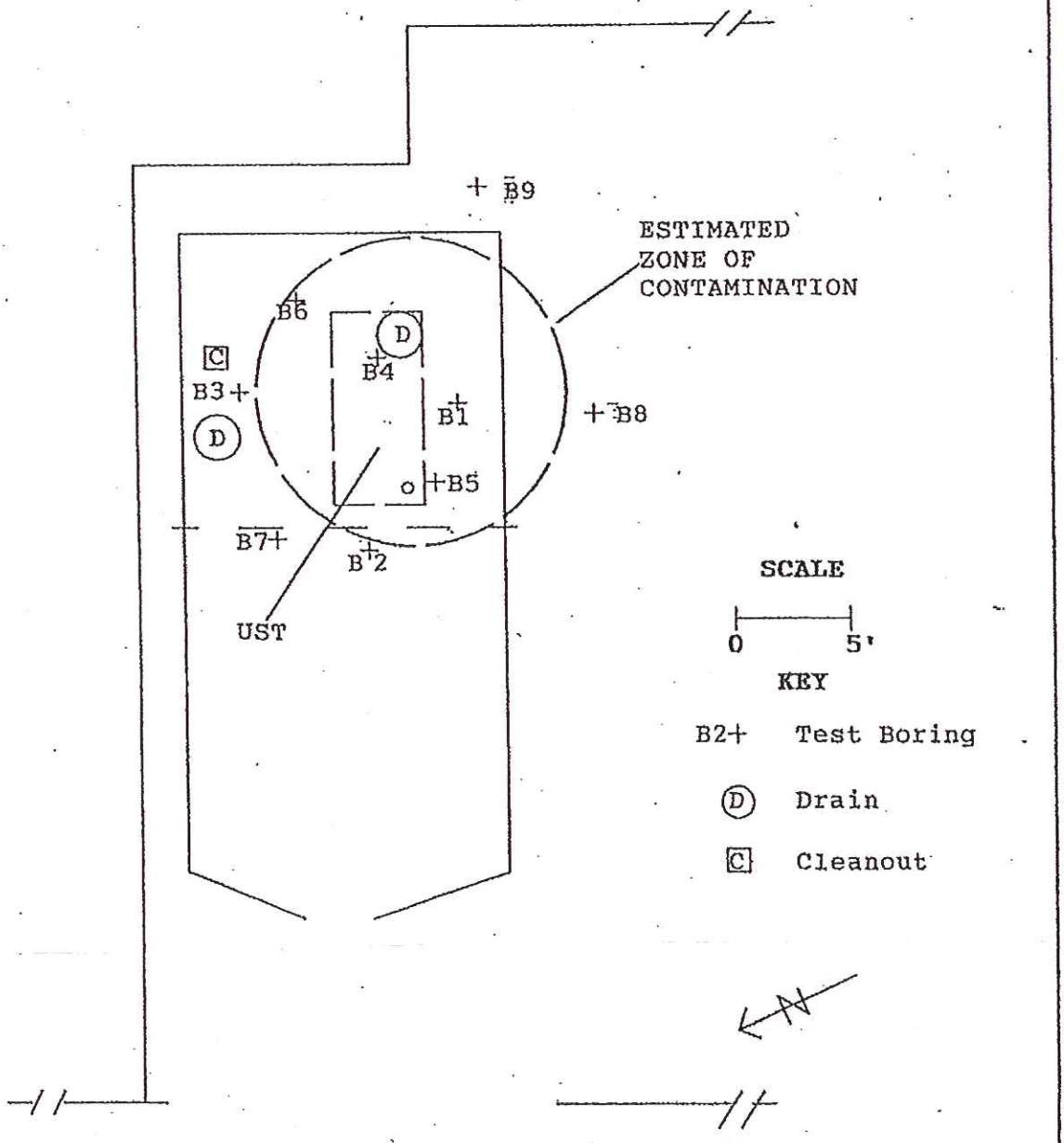
SITE PLAN - NORTH LOT on 9/12/94
BISON ENVIRONMENTAL NORTHWEST, INC.
PROJECT# 94481-3 SEPT 1994

Figure B2 - Additional NGS Soil Sample Locations



SITE PLAN
BISON ENVIRONMENTAL NORTHWEST, INC.
PROJECT# 94481 AUGUST 1994

Figure B3 - SGS Soil Sample Locations



SITE PLAN - WALKER CHEVROLET PAINT BOOTH
BISON ENVIRONMENTAL NORTHWEST, INC.
PROJECT# 94481-2 SEPTEMBER 1994

Figure B4 - Paint Booth

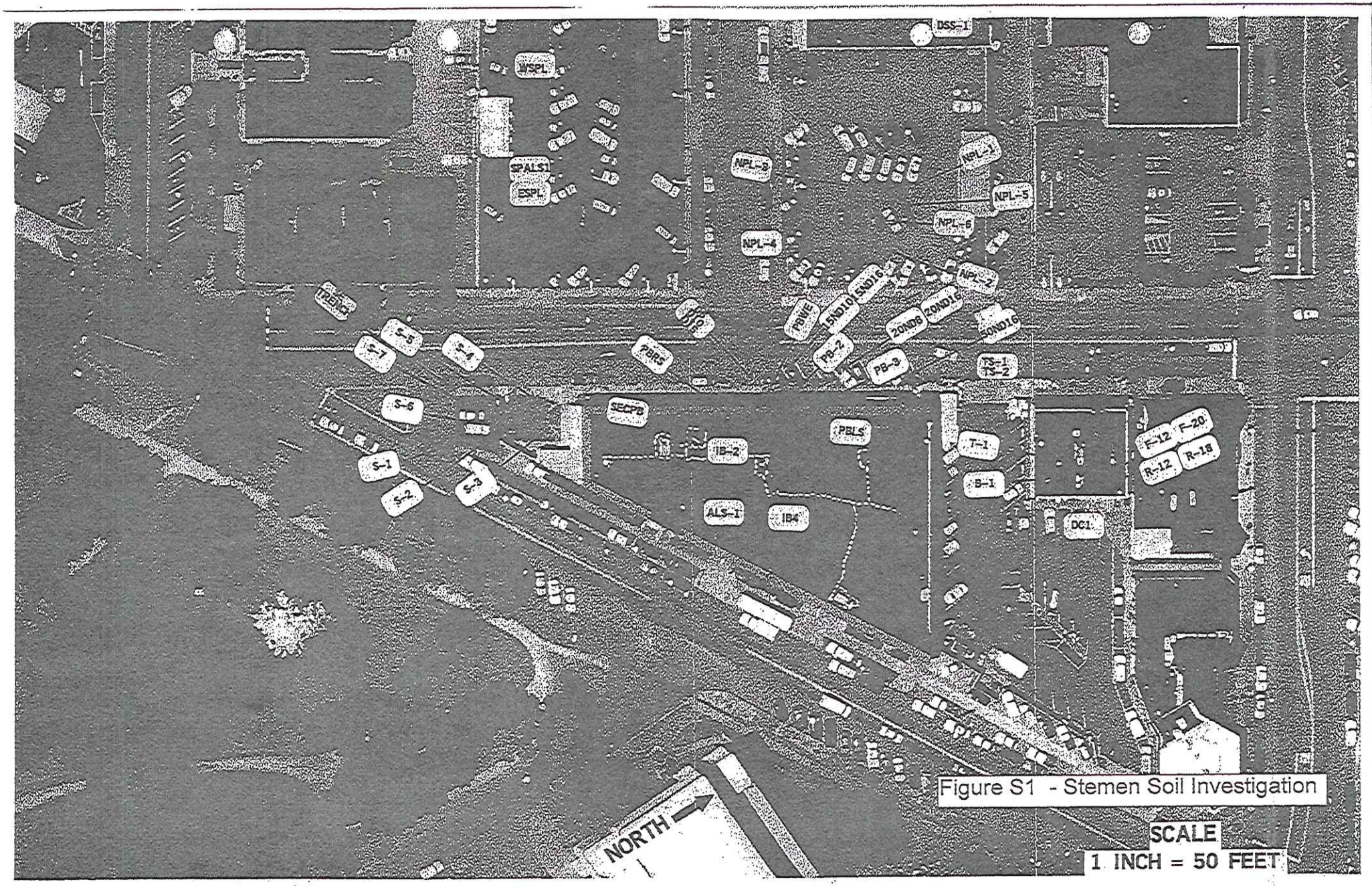


Figure S1 - Stemen Soil Investigation

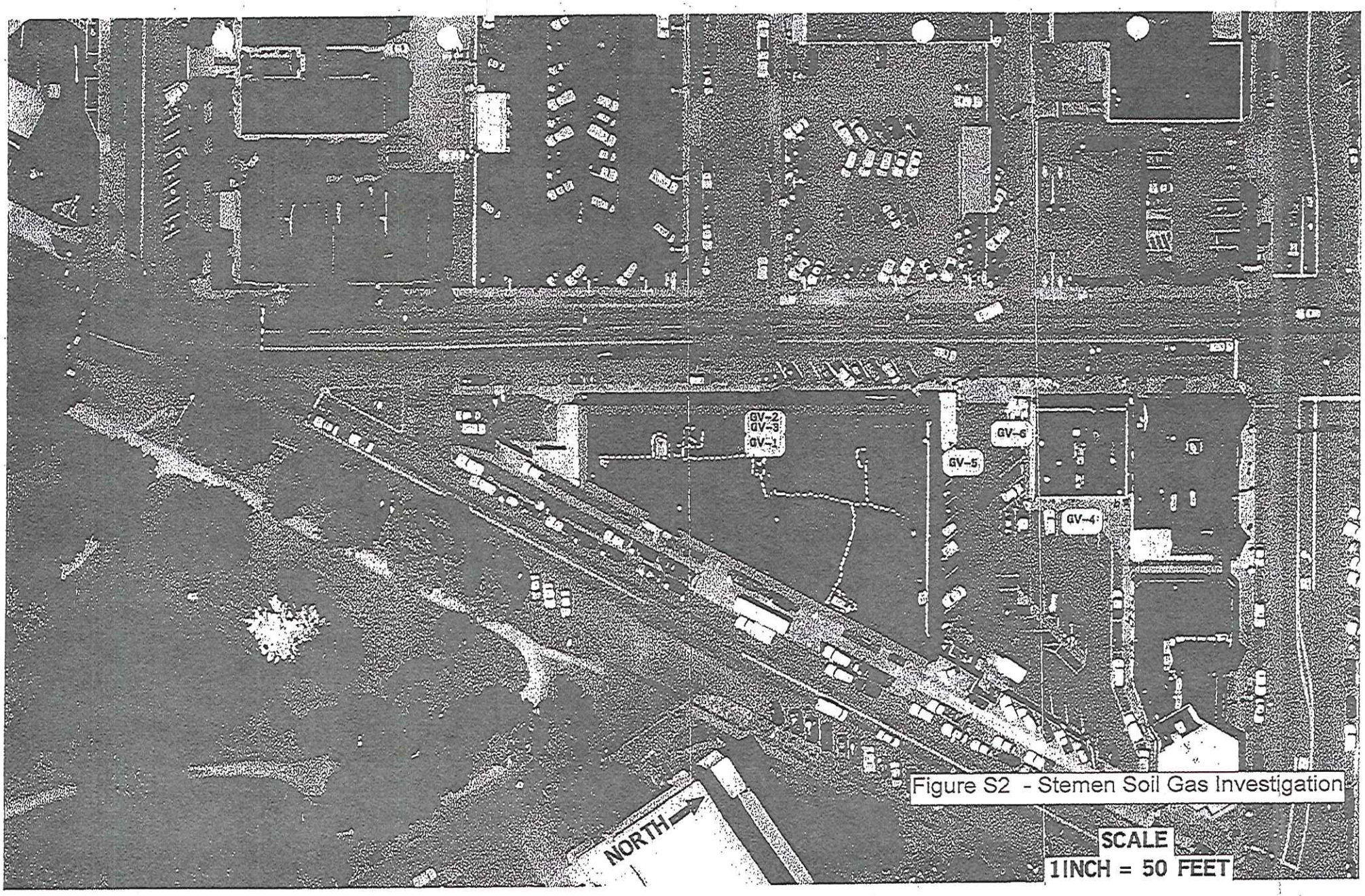


Figure S2 - Stemen Soil Gas Investigation

Table 1-3 - Concentrations of Volatile Organic Compounds in Groundwater at Updgradient Former Walker Chevrolet Site and Downgradient Morrell's Dry Cleaners Site

Project #080190 - Tacoma, Washington

Well ID	Screen Interval (feet bgs)	Date	Volatile Organic Compounds								
			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	Vinyl Chloride	Carbon Tetrachloride	Chloroform	Naphthalene
MTCA Method A, Groundwater CUL, Table Value (µg/L)			5	5	-	-	-	0.2	-	-	160
Federal and State Maximum Contaminant Level (µg/L)			5	5	70	100	7	2	5	80	-
Groundwater Cleanup Level (µg/L)			5	5	70	100	7	0.2	5	80	160
Advance Outwash Wells											
Former Walker Chevrolet Site											
MW-1	50 - 65	8/28/07	1.3	<1	<1	<1	<1	<0.2	<1	<1	<1
		1/30/08	<1	<1	<1	<1	<1	<0.2	<1	<1	<1
		10/2/08	<1	<1	<1	<1	<1	<0.2	<1	<1	<1
		5/11/09	<1	<1	<1	<1	<1	<0.2	<1	<1	<1
		12/22/10	<1	<1	<1	<1	<1	<0.2	<1	<1	<1
		2/6/12	<1	<1	<1	<1	<1	<0.2	<1	<1	<1
		1/10/14	<0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	0.39	<0.5
MW-11	53 - 63	5/12/09	<1	2.3	<1	<1	<1	<0.2	1.4	1.9	<1
		12/22/10	<1	4.6	<1	<1	<1	<0.2	2.8	2.0	<1
		1/23/14	<1	1.4	<1	<1	<1	<0.2	<1	<1	0.15
Morrell's Dry Cleaners Site (Upgradient to Downgradient Order)											
MW-5	50 - 65	1/22/08	67	3	13	<1	<1	<0.2	3.3	2.1	<1
		1/30/08	81	1.1	4.5	<1	<1	<0.2	2.0	1.8	<1
		10/2/08	75	3.2	17	<1	<1	<0.2	1.2	1.9	<1
		5/11/09	77	1.1	44	<1	<1	<0.2	<1	<1	<1
		12/22/10	190	14	41	<1	<1	<0.2	3.2	2.9	<1
		2/6/12	140	5	25	<1	<1	<0.2	<1	<1	<1
		1/9/14	<0.2	0.46	<0.2	<0.2	<0.2	<0.2	<0.2	0.35	0.14
MW-19	45 - 60	1/8/14	52	4.8	20	<1	<1	<0.2	7	3.8	<1
MW-20	45 - 60	1/8/14	160	10	43	<1	<1	<0.2	3.6	2.2	<1
MW-18 (angled with 45 degree vertical angle)	46 - 60	12/12/13	490	57	350	<1	<1	0.53	<1	1.3	<1
MW-2	50 - 65	8/28/07	2,300	1,500	2,100	7.4	<1	10	1.0	1	<1
		1/30/08	1400	520	2000	3	<1	<0.2	<1	2.5	<1
		10/2/08	1,900	880	3,100	5.3	<1	4.7	1.0	3.5	<1
		5/12/09	1,600	530	2,400	5.7		27	<1	4.0	<1
		12/22/10	2,100	1,100	2,100	4.8	<1	2.7	<1	5.0	<1
		2/6/12	500	310	1,400	<100	<100	20	<100	<100	<100
		12/12/13	1,500	840	2,100	2.7	<1	0.54	<1	3.3	<1
MW-17 (angled with 32 degree vertical angle)	43 - 60	12/13/13	170	24	65	<1	<1	<0.2	3	2.4	<1
MW-16 (angled with 23 degree vertical angle)	41 - 60	12/13/13	290	98	350	<1	<1	0.49	2.2	2.5	<1
MW-7	50 - 65	1/22/08	6.6	<1	<1	<1	<1	<0.2	<1	<1	<1
		1/30/08	1.5	<1	<1	<1	<1	<0.2	1.5	<1	<1
		10/2/08	<1	<1	<1	<1	<1	<0.2	1.5	<1	<1
		5/11/09	1.1	<1	<1	<1	<1	<0.2	2.0	<1	<1
		12/22/10	1.4	<1	<1	<1	<1	<0.2	3.3	<1	<1
		2/6/12	<1	<1	<1	<1	<1	<0.2	2.2	<1	<1
		1/7/14	1.4	<1	<1	<1	<1	<0.2	1.6	<1	<1
MW-8	51 - 61	4/22/08	1,100	280	2,400	6.3	<1	1.2	<1	2.5	<1
		10/2/08	530	230	1,600	7.6	10	5.2	<1	2.5	<1
		5/12/09	1,100	270	2,500	3.7		20	<1	2.5	
		12/22/10	470	150	1,400	3.3	3.7	14	<1	2.2	<1
		2/6/12	360	210	1,500	<100	<100	70	<100	<100	<100
		12/17/13	270	150	1,300	<50	<50	210	<50	<50	<50
MW-15 (angled with 37 degree vertical angle)	44 - 60	12/17/13	450	110	320	<10	<10	42	<10	<10	<10
		12/17/13	420	110	370	<10	<10	52	<10	<10	<10
MW-21	45 - 60	12/17/13	500	230	450	<10	<10	22	<10	<10	<10

Table 1-3 - Concentrations of Volatile Organic Compounds in Groundwater at Updgradient Former Walker Chevrolet Site and Downgradient Morrell's Dry Cleaners Site

Project #080190 - Tacoma, Washington

Well ID	Screen Interval (feet bgs)	Date	Volatile Organic Compounds								
			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	Vinyl Chloride	Carbon Tetrachloride	Chloroform	Naphthalene
MTCA Method A, Groundwater CUL, Table Value (µg/L)			5	5	-	-	-	0.2	-	-	160
Federal and State Maximum Contaminant Level (µg/L)			5	5	70	100	7	2	5	80	-
Groundwater Cleanup Level (µg/L)			5	5	70	100	7	0.2	5	80	160
Interglacial Deposit Wells											
Morrell's Dry Cleaners Site											
MW-8D	96 - 116	5/11/09	<1	<1	11	<1	<1	<0.2	1.9	<1	<1
		12/22/10	<1	<1	21	<1	<1	<0.2	2.0	<1	<1
		2/6/12	<1	<1	26	<1	<1	<0.2	1.8	<1	<1
		1/10/14	<0.2	<0.2	42	<0.2	<0.2	<0.2	1.7	0.68	0.8
MW-12D	113 - 133	12/22/10	[redacted]	<1	22	<1	<1	<0.2	<1	<1	<1
		2/6/12	<1	<1	17	<1	<1	<0.2	<1	<1	<1
		1/10/14	0.7	0.34	22	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5
MW-13D	125 - 145	12/22/10	[redacted]	3.2	30	<1	<1	<0.2	<1	<1	<1
		2/6/12	4.2	2.4	28	<1	<1	<0.2	<1	<1	<1
		12/16/13	[redacted]	3.7	32	<1	<1	<0.2	<1	<1	<1
MW-14D	123 - 143	2/6/12	4.2	3.3	28	<1	<1	<0.2	<1	<1	<1
		1/10/14	2.4	1.0	4.5	<1	<1	<0.2	<1	<1	2.0

Notes:

BOLD Highlighted signifies exceedance of proposed Groundwater Cleanup Level (most stringent of MTCA Method A, Table Value and Federal and State MCL).

All values are in units of micrograms per liter (µg/L).

Dashes indicate no value available

1,1-DCE = 1,1-dichloroethylene

cis-1,2-DCE = cis-1,2-dichloroethylene

MCL = maximum contaminant level

MTCA = Model Toxics Control Act

PCE = tetrachloroethylene

TCE = trichloroethylene

trans-1,2-DCE = trans-1,2-dichloroethylene

Table 1-5 - Indoor, Ambient, and Sub-Slab Air Sample Results near Former Paint Booth

Project #080190 - Former Walker Chevrolet Site
Tacoma, Washington

Description/ Chemical Name	Acceptable Indoor Air Screening Level (SL_{IA}), MTCA Method B, Air, Screening Level	Indoor Air, Above Former Paint Booth	Outdoor Air, Ambient Conditions	Screening Level In Soil Gas Protective of Indoor Air (SL_{SG})	Sub-slab Air, Beneath Former Paint Booth			Sub-slab Air, Adjacent to Former Paint Booth
Location		Inside current produce cooler and former paint booth area	Parking lot on west side of North 1st Street		East side of paint booth	Middle of paint booth	West side of paint booth	Beneath concrete sidewalk adjacent to building and former roll-up door for paint booth
Sample ID Sample duration (hours) Date and time collected		Indoor-012214 8 1/22/14 3:55 PM	Outdoor Air-012214 8 1/22/14 4:15 PM		GV-1 5/8/2008	GV-2 5/8/2008	GV-3 5/8/2008	Subslab-012314 1 1/23/14 1:15 PM
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
PCE	9.6	0.61	<0.21	96	110	7000	150	277
TCE	0.37	<0.32	<0.17	3.7	<20	<20	<20	1.2
cis-1,2-DCE	-	<0.24	<0.12	-	<50	<50	<50	<0.27
trans-1,2-DCE	-	<1.2	<0.61	-	<50	<50	<50	<1.3
Vinyl chloride	0.28	<0.077	<0.04	2.8	<200	<200	<200	<0.087
Benzene	0.32	NA	NA	3.2	<20	<20	<20	NA
Toluene	2,300	NA	NA	23,000	130	240	160	NA
Ethylbenzene	460	NA	NA	4,600	<100	<100	<100	NA
Xylenes	46	NA	NA	460	<100	150	230	NA

Notes:
Bold highlighted font indicates exceedance of most conservative screening level.
Dashes indicate no value available.
DCE = dichloroethylene
in-Hg = inches of mercury
$\mu g/m^3$ = micrograms per cubic meter
NA = not analyzed
PCE = tetrachloroethylene
SL_{IA} = Acceptable indoor air screening level.
SL_{SG} = Screening level in soil gas protective of indoor air.
TCE = trichloroethylene
VAF = Vapor attenuation factor (unitless); default value of 0.1 should be assumed in Tier I Evaluations (Draft Vapor Intrusion Guidance, Ecology, 2009).

$SL_{SG} = SL_{IA} / VAF$ (Equation 2 in Draft Vapor Intrusion Guidance, Ecology, 2009).
Ecology, 2009, Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action, Publication No. 09-09-047

TABLE A:
LABORATORY RESULTS - PREVIOUS STUDY

Sample No./ Location	Analysis	Analyte	Results	Cleanup Level
B1-5.5'	WTPH-418.1	TPH	8,000 ppm	200 ppm
Sediment Sample D1 Inside Pipe Removed During Decommissioning	Total Metals	Barium	43.8 ppm	5,600 ppm*
		Cadmium	50.2 ppm	2 ppm
		Chromium	110 ppm	100 ppm
		Lead	2140 ppm	250 ppm
		As, Cd, SE, & Ag	ND	-
	EPA 8240	Ethylbenzene	2,200 ppb	20,000 ppb
		Isopropylbenzene	1,600 ppb	NA
		p-Isopropyltoluene	480 ppb	NA
		Tetrachloroethene	210 ppb	500 ppb
		Naphthalene	1,100 ppb	320,000 ppb*
		n-Propylbenzne	1,500 ppb	NA
		Toluene	85,000 ppb	40,000 ppb
		1,2,4 Trimethylbenzene	11,000 ppb	NA
		1,3,5 Trimethylbenzene	5,000 ppb	NA
		Total Xylenes	143,000 ppb	20,000 ppb
		Other VOCs		
B2-5.5'	WTPH-418.1	TPH	79 ppm	200 ppm
B3-2'	WTPH-418.1	TPH	96 ppm	200 ppm
	EPA 8240	Toluene	13 ppb	40,000 ppb
		Total Xylenes	5 ppb	20,000 ppb
		Other VOCs	ND	-
B4-3'	WTPH-418.1	TPH	480 ppm	200 ppm
	EPA 8240	Toluene	7 ppb	40,000 ppb
		Total Xylenes	6 ppb	20,000 ppb
		Other VOCs	ND	-

TABLE B:
LABORATORY RESULTS - TEST BORINGS

Sample No./ Location	Analysis	Analyte	Results	Cleanup Level
B5-5'	WTPH-HCID	Hydrocarbons	Gasoline - ND Diesel - ND Oil - Detected	
	WTPH-418.1	TPH	390 ppm	200 ppm
	EPA 8240	Methylene Chloride	26 ppb+	500 ppb
		Toluene	96 ppb+	40,000 ppb
		Total Xylenes	10 ppb	20,000 ppb
		Other VOCs	ND	
B5-7.5'	WTPH-418.1	TPH	2500 ppm	200 ppm
B5-9'	WTPH-418.1	TPH	4400 ppm	200 ppm
B5-10'	WTPH-HCID	Hydrocarbons	Gasoline - ND Diesel - ND Oil - Detected	
	WTPH-418.1	TPH	260 ppm	200 ppm
	EPA 8240	Benzene	24 ppb	500 ppb
		n-Butylbenzene	15 ppb	NA
		sec-Butylbenzene	22 ppb	NA
		Ethylbenzene	130 ppb	20,000 ppb
		Isopropylbenzene	50 ppb	NA
		p-Isopropyltoluene	15 ppb	NA
		Tetrachloroethene	53 ppb	500 ppb
		Methylene Chloride	28 ppb+	500 ppb
		n-Propylbenzene	80 ppb	NA
		Toluene	720 ppb+	40,000 ppb
		1,2,4 Trimethylbenzene	130 ppb	NA
		1,3,5 Trimethylbenzene	170 ppb	NA
		Total Xylenes	790 ppb	20,000 ppb
		Other VOCs	ND	
B6-5'	WTPH-HCID	Hydrocarbons	Gas - Detected Diesel - ND Oil - ND	
	WTPH-G	Gasoline	100 ppm	100 ppm
	EPA 8240	n-Butylbenzene	15 ppb	NA
		sec-Butylbenzene	22 ppb	NA
		Ethylbenzene	690 ppb	20,000 ppb
		p-Isopropyltoluene	83 ppb	NA
		Naphthalene	190 ppb	320,000 ppb
		n-Propylbenzne	99 ppb	NA
		Toluene	8,600 ppb+	40,000 ppb
		1,2,4 Trimethylbenzene	790 ppb	NA
		1,3,5 Trimethylbenzene	300 ppb	NA
		Total Xylenes	7,100 ppb	20,000 ppb
		Other VOCs		

TABLE B (continued)

Sample No./ Location	Analysis	Analyte	Results	Cleanup Level
B6-8'	WTPH-HCID	Hydrocarbons	ND	
	EPA 8240	Ethylbenzene	12 ppb	20,000 ppb
		Toluene	370 ppb+	40,000 ppb
		Total Xylenes	150 ppb	20,000 ppb
		Methylene Chloride	39 ppb+	500 ppb
		1,2,4 Trimethylbenzene	13 ppb	NA
		1,3,5 Trimethylbenzene	6 ppb	NA
		Other VOCs	ND	
B7-4'	WTPH-HCID	Hydrocarbons	ND	
	EPA 8240	Toluene	11 ppb+	40,000 ppb
		Methylene Chloride	41 ppb+	500 ppb
		Other VOCs	ND	
B8-5'	WTPH-HCID	Hydrocarbons	ND	
	EPA 8240	Toluene	14 ppb+	40,000 ppb
		Methylene Chloride	48 ppb+	500 ppb
B9-5'	WTPH-HCID	Hydrocarbons	ND	
	EPA 8240	VOCs	ND	

NOTES:

+ Compound also appeared in laboratory blank, suggesting cross-contamination in laboratory.
1) ppm indicates parts per million.
2) ppb indicates parts per billion.
3) TPH indicates total petroleum hydrocarbons. The 418.1 analysis is designed for heavy oils, but also reports lighter hydrocarbon fractions.
4) ND denotes none detected. Refer to laboratory reports for detection limits.
5) Unless indicated by asterix, cleanup levels are "Method A" values as specified in the Model Toxics Control Act (MTCA), WAC 173-340. Asterix indicates MTCA Method B value.
6) NA indicates a published MTCA cleanup level for this compound is not currently available.

TITUS/THRIFTWAY

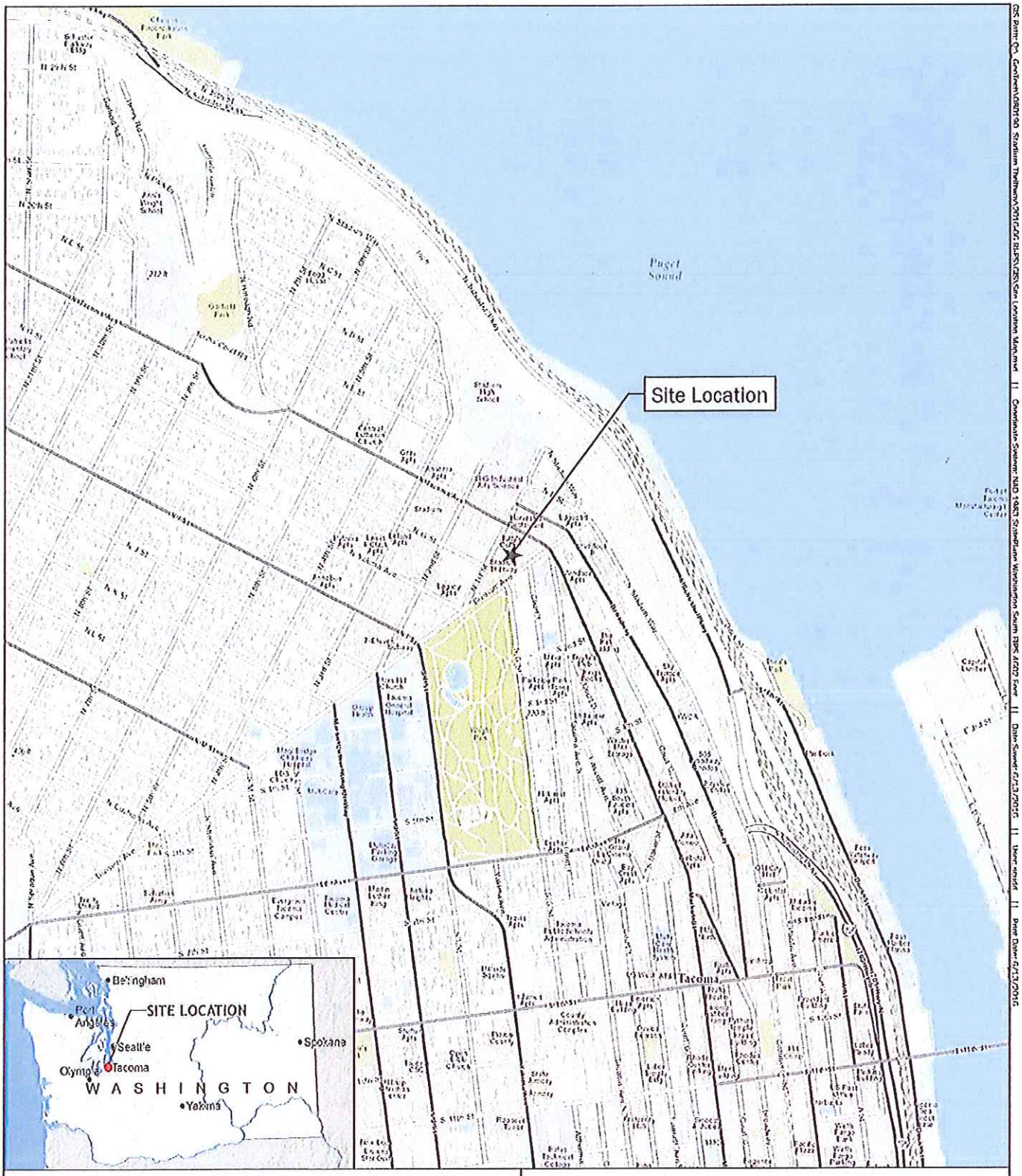
Table S1 - Stemen Soil Investigation

ANALYSES OF SOIL FOR TOTAL PETROLEUM HYDROCARBONS EPA METHOD NWTPH-Dx/Dx EXTENDED

SAMPLE NUMBER	SAMPLE DATE	DEPTH	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE	DIESEL	OIL	MINERAL OIL
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
S-1-15	8/31/06	15'	6.1	4.1	6	12	920	ND	ND	ND
S-2-15	8/31/06	15'	ND	ND	ND	ND	ND	ND	ND	ND
S-7-15	8/31/06	16'					360	ND	ND	ND
S-3-15	8/31/06	15'	ND	ND	ND	ND	ND	ND	ND	ND
S-4-15	8/31/06	15'	ND	ND	ND	ND	ND	ND	ND	ND
S-5-15	8/31/06	13'	ND	ND	ND	ND	ND	ND	ND	ND
S-6-8	8/31/06	8'	ND	ND	ND	ND	ND	ND	ND	ND
PB-3-8	8/31/06	8'	*	*	*	*	30	ND	ND	ND
NPL-6-20	8/31/06	20'	ND	ND	ND	ND	ND	ND	ND	ND
ESPL-24	8/31/06	24	ND	ND	ND	ND	ND	ND	ND	ND
WSPL-20	8/31/06	20'	ND	ND	ND	ND	ND	ND	ND	ND
NPL-1-21	8/31/06	21'	ND	ND	ND	ND	ND	ND	ND	ND
NPL-2-19	8/31/06	19'	ND	ND	ND	ND	ND	ND	ND	ND
NPL-3-19	8/31/06	19'	ND	ND	ND	ND	ND	ND	ND	ND
NPL-4-19	8/31/06	19'	ND	ND	ND	ND	ND	ND	ND	ND
NPL-5-20	8/31/06	20'	ND	ND	ND	ND	ND	ND	ND	ND
IB2-6	8/31/06	6'	ND	ND	ND	ND	ND	ND	94	ND
SECPB-8	8/31/06	8'	ND	ND	ND	ND	ND	ND	ND	ND
S PALS-1	9/18/06	23.5'	*	*	*	*	ND	ND	ND	ND
DC PLAS-2	9/18/06	18.5-20'	*	*	*	*	ND	ND	ND	ND
IB4	10/20/06	60"	*	*	*	*	ND	ND	ND	ND
PBWE	10/20/06	24"	*	*	*	*	ND	ND	87	ND
PBLS-24	10/20/06	24"	*	*	*	*	ND	ND	ND	ND
PBLS-36	10/20/06	36"	*	*	*	*	ND	ND	ND	ND
ALS-1	10/20/06	32"	*	*	*	*	ND	ND	220	ND
DSS-1	10/20/06	36"	*	*	*	*	ND	ND	ND	ND
PBRS	10/20/06	30"	*	*	*	*	ND	ND	ND	ND
MDL			0.02	0.05	0.05	0.05	10	30	40	40

* = Not analyzed

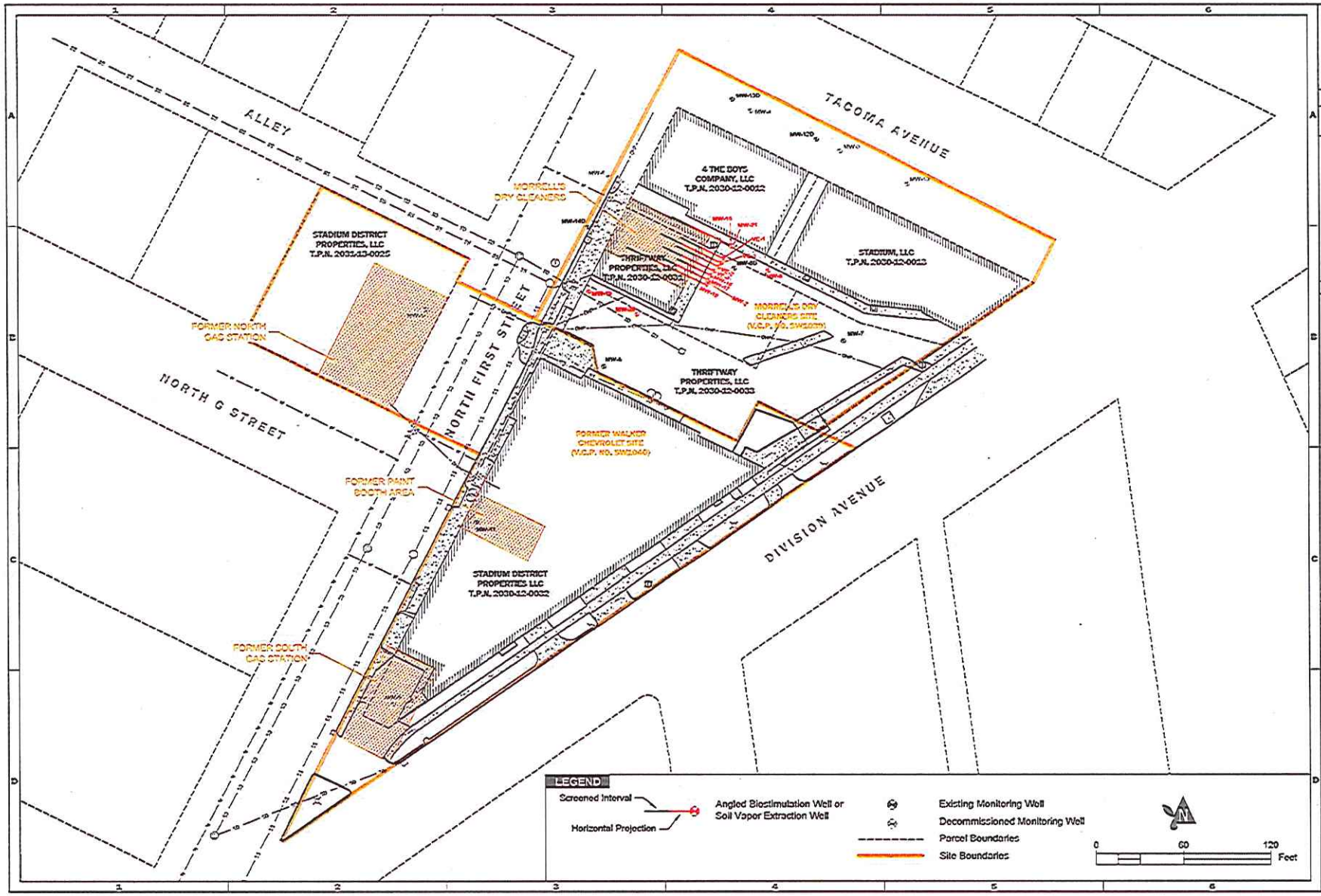
Figures

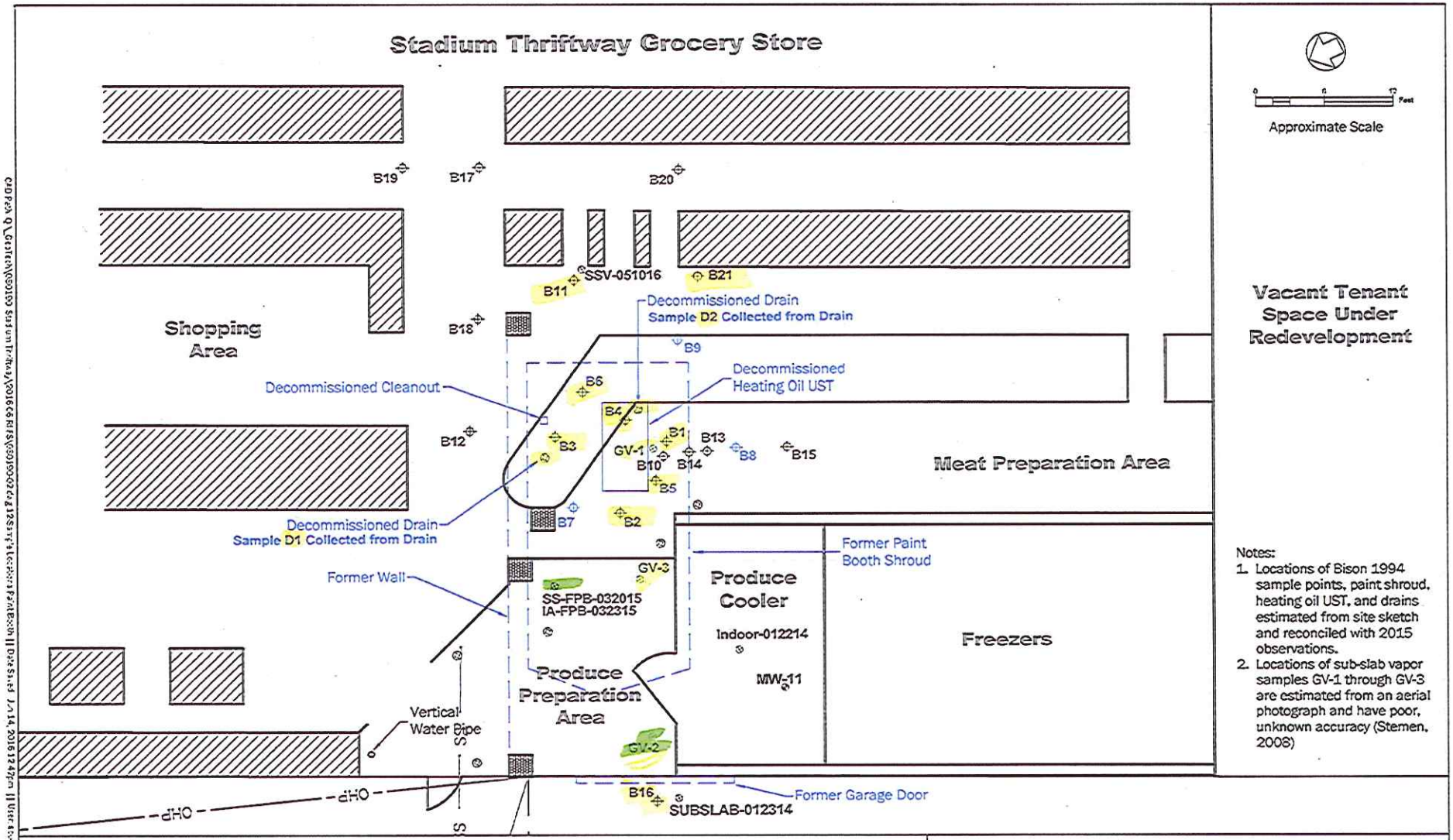


Site Location Map

Remedial Investigation/Feasibility Study
Former Walker Chevrolet (VCP No. SW1040)
633 Division Avenue, Tacoma, Washington

Aspect Consulting	JUN-2016	BY AM/SCC	FIGURE NO.
	PROJECT NO 080190	REVBY -	1

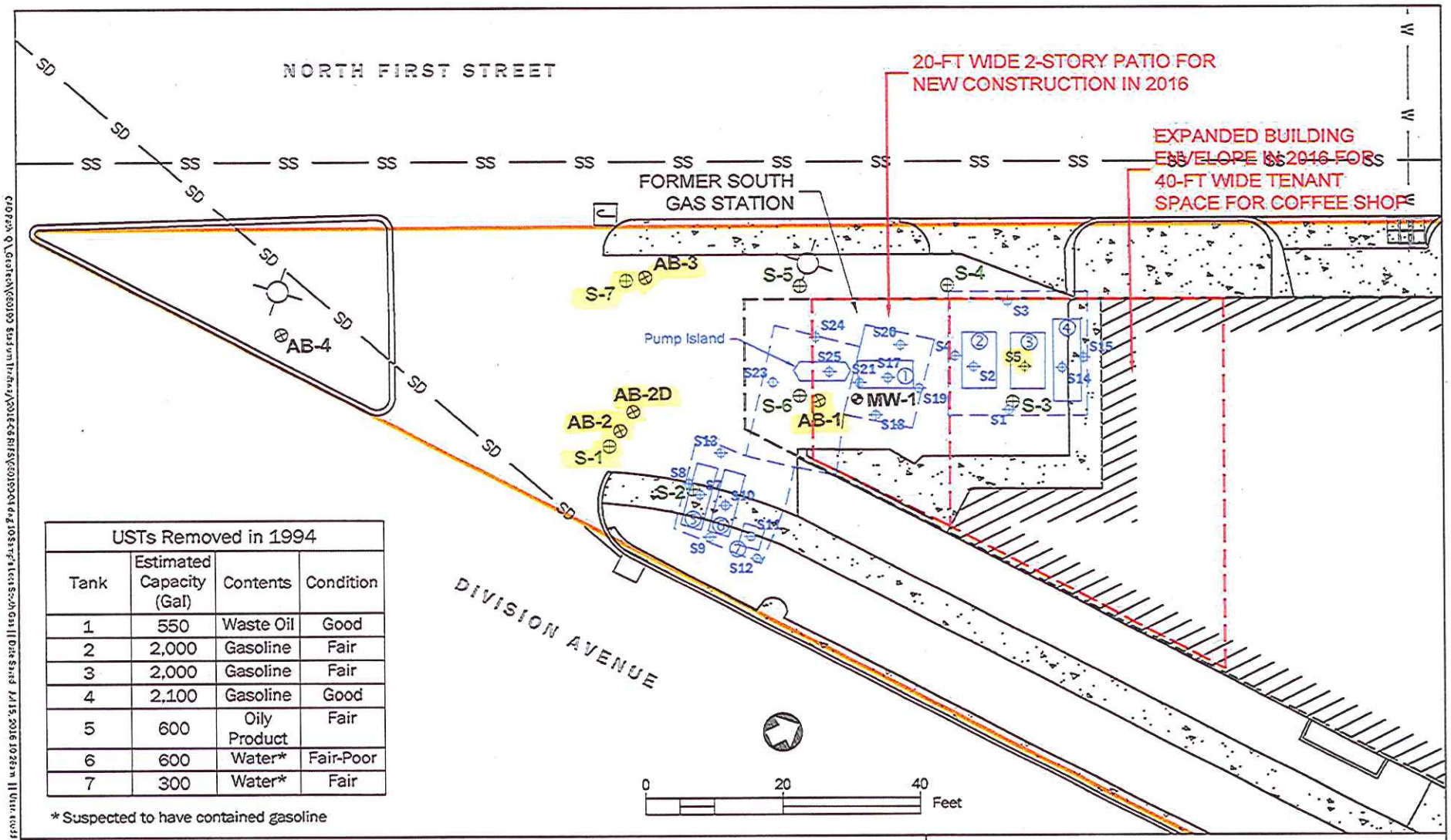

ALLEY
TACOMA AVENUE
NORTH FIRST STREET
NORTH G STREET
DIVISION AVENUE
MORRELL'S DRY CLEANERS
4 THE BOYS COMPANY, LLC T.P.N. 2030-12-0012
STADIUM, LLC T.P.N. 2030-12-0013
THRIFTWAY PROPERTIES, LLC T.P.N. 2030-12-0032
MORRELL'S DRY CLEANERS SITE (VCP No. SW0070)
THRIFTWAY PROPERTIES, LLC T.P.N. 2030-12-0033
STADIUM DISTRICT PROPERTIES, LLC T.P.N. 2031-13-0025
FORMER NORTH GAS STATION
FORMER WALKER CHEVROLET SITE (VCP No. SW1040)
FORMER PAINT BOOTH AREA
STADIUM DISTRICT PROPERTIES LLC T.P.N. 2030-12-0022
FORMER SOUTH GAS STATION
LEGEND
Screened Interval
Horizontal Projection
Angled Biostimulation Well or Soil Vapor Extraction Well
Existing Monitoring Well
Decommissioned Monitoring Well
Parcel Boundaries
Site Boundaries
0
60
120
Feet
Aspect CONSULTING
Site Map for Morrell's Dry Cleaners & Former Walker Chevrolet
Remedial Investigation/Feasibility Study
Former Walker Chevrolet (VCP No. SW1040)
633 Division Avenue, Tacoma, Washington
FIGURE NO.
2



Sample Locations and Details Near Former Paint Booth

Remedial Investigation/Feasibility Study
Former Walker Chevrolet (VCP No. SW1040)
633 Division Avenue, Tacoma, Washington

Aspect Consulting	JUL-2016	BY: AN/SCC	FIGURE NO. 3
	PROJECT NO. 080190	REVISED BY: SCC	



USTs Removed in 1994			
Tank	Estimated Capacity (Gal)	Contents	Condition
1	550	Waste Oil	Good
2	2,000	Gasoline	Fair
3	2,000	Gasoline	Fair
4	2,100	Gasoline	Good
5	600	Oily Product	Fair
6	600	Water*	Fair-Poor
7	300	Water*	Fair

* Suspected to have contained gasoline

Legend

- Soil Boring Location (Aspect, 2013 & 2015)
- Soil Boring Location (Stemen, 2006)
- Monitoring Well Location
- Excavation Confirmation Sample Location (Bison, 1994)
- Excavation Area
- Tank Location and Number

Sample Locations and Details at Former South Gas Station

Remedial Investigation/Feasibility Study
Former Walker Chevrolet (VCP No. SW1040)
633 Division Avenue, Tacoma, Washington

Aspect Consulting	JUL-2016	BY AN/SCC	FIGURE NO. 4
	PROJECT NO. 080190	REVISED BY SCC	

Tables

Table 1. Soil Sample Results at South Gas Station

Project No. 030190, Former Walker Chevrolet Site (VCP No. SW1040)
633 Division Avenue, Tacoma, Washington

Description/Chemical Name	Laboratory Method	Method A, Unrestricted Land Use, Table Value (mg/kg)	S17 5/2/1994	S18 5/2/1994	S19 5/2/1994	S20 5/2/1994	S21 5/2/1994	S22 5/2/1994 (Soil was Excavated)	S23 5/2/1994	S24 5/2/1994	S25 5/2/1994	O1 5/1/1994	O2 5/1/1994	O3 5/1/1994	O4 5/1/1994	O5 5/1/1994	O6 5/2/1994
Location			Excavation, bottom, Tank 1	Excavation, east wall, Tank 1	Excavation, north wall, Tank 1	Excavation, west wall, Tank 1	Excavation, south wall, Tank 1	Excavation, pump island (Removed)	Excavation, south wall, pump island	Excavation, west wall, pump island	Excavation, bottom, pump island	Tank 2 overburden	Tank 3 Overburden	Tank 1 Overburden	Tank 5-8 Overburden	Tank 5-8 Overburden	Tank 1 Overburden
Sample Depth			8 ft	6 ft	7 ft	6 ft	7 ft	2 ft	3 ft	3 ft	5 ft						
Total Petroleum Hydrocarbons																	
TPH, Gasoline-Range (mg/kg)	WTPH-HCID, 418.1	30	20 U	20 U	20 U	20 U	20 U		20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
TPH, Diesel-Range (mg/kg)	WTPH-HCID, 418.1	2,000	50 U	50 U	50 U	50 U	50 U		50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
TPH, Heavy Oil-Range (mg/kg)	WTPH-HCID, 418.1	2,000	100 U	100 U	100 U	100 U	100 U		100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	1,900
TPH, undifferentiated (mg/kg)	418.1	30						570					20 U				
TPH, Gasoline-Range (mg/kg)	NWTPH-Gx	30															
TPH, Diesel-Range (mg/kg)	NWTPH-Dx	2,000															
TPH, Oil-Range (mg/kg)	NWTPH-Dx	2,000															
Volatile Petroleum Compounds																	
Benzene (mg/kg)	8260C	0.03						1.42					0.3 U				0.005 U
Toluene (mg/kg)	8260C	7						7.81					0.3 U				0.005 U
Ethylbenzene (mg/kg)	8260C	6						11.11					0.3 U				0.005 U
Xylenes, total (mg/kg)	8260C	9						84.2					0.3 U				0.005 U
Fuel Additives and Blending Compounds																	
1,2-Dibromoethane (EDB; mg/kg)	8260C	0.005															0.01 U
1,2-Dichloroethane (EDC; mg/kg)	8260C																0.005 U
Methyl tert-butyl ether (MTBE; mg/kg)	8260C	0.1															NR
Lead (mg/kg)	200.8	250						78									34
Other Petroleum Compounds																	
Naphthalene (mg/kg)	8270D SIM	5															0.005 U
Isopropylbenzene (mg/kg)	8270D SIM																
n-Propylbenzene (mg/kg)	8270D SIM																
1,2,4-Trimethylbenzene (mg/kg)	8270D SIM																
1,3,5-Trimethylbenzene (mg/kg)	8270D SIM																
n-Butylbenzene (mg/kg)	8270D SIM																
sec-Butylbenzene (mg/kg)	8270D SIM																
tert-Butylbenzene (mg/kg)	8270D SIM																
Isopropyltoluene (mg/kg)	8270D SIM																
p-Isopropyltoluene (mg/kg)	8270D SIM																
Other Compounds																	
Chlorinated VOCs (mg/kg)	8260C																0.01 U
PCB mixtures (mg/kg)		1															0.1 U

Notes:
Bold highlighted font indicates exceedance of most conservative screening level.
Potential chemicals of concern include gasoline-range organics from Table 830-1 in Model Toxics Control Act.
ft = feet
mg/kg = milligrams per kilogram
MTCA = Model Toxics Control Act
NR = not reported
U = analyte was not detected at or above the reported result.
NWTPH = Northwest total petroleum hydrocarbon method
WTPH = Washington total petroleum hydrocarbon method
HCID = hydrocarbon identification analysis

Table 1 Soil Sample Results at South Gas Station

Project No. 130190, Former Walker Chevrolet Site (VCP No. SW1040)
633 Division Avenue, Tacoma, Washington

Description/Chemical Name	Laboratory Method	Method A, Unrestricted Land Use, Table Value (mg/kg)	AB-1-15 12/20/2013	AB-1-25 12/20/2013	AB-1-45 12/20/2013	AB-1-61.5 12/20/2013	AB-2-16.5 4/6/2015	AB-2D-10 3/4/2016	AB-2D-15 3/4/2016	AB-2D-27.5 3/4/2016	AB-2D-37.5 3/4/2016	AB-2D-62.5 3/4/2016	AB-3-16.5 4/6/2015	AB-4-16.5 4/6/2015
Location			Middle of parking lot (Near former pump island)				SE corner of parking lot (5 ft from S-1)	SE corner of parking lot (Adjacent to AB-2)					SW corner of parking lot (1 ft from S-7)	Triangular median south of parking lot
Sample Depth			15 ft	25 ft	45 ft	61.5 ft	16.5 ft	10 ft	15 ft	27.5 ft	37.5 ft	62.5 ft	16.5 ft	16.5 ft
Total Petroleum Hydrocarbons														
TPH, Gasoline-Range (mg/kg)	WTPH-HCID, 418.1	30												
TPH, Diesel-Range (mg/kg)	WTPH-HCID, 418.1	2,000												
TPH, Heavy Oil-Range (mg/kg)	WTPH-HCID, 418.1	2,000												
TPH, unidifferentiated (mg/kg)	418.1	30												
TPH, Gasoline-Range (mg/kg)	NWTPH-Gx	30	37	3	2 U	2 U	1,900	2 U	670	18	2 U	2 U	520	2 U
TPH, Diesel-Range (mg/kg)	NWTPH-Dx	2,000					1,600 X	50 U	110 X	50 U	50 U	50 U	180 X	50 U
TPH, Oil-Range (mg/kg)	NWTPH-Dx	2,000					250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Volatile Petroleum Compounds														
Benzene (mg/kg)	8260C	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Toluene (mg/kg)	8260C	7	0.02 U	0.02 U	0.02 U	0.02 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Ethylbenzene (mg/kg)	8260C	6	0.02 U	0.02 U	0.02 U	0.02 U	0.24	0.05 U	0.15	0.05 U	0.05 U	0.05 U	0.063	0.05 U
Xylenes, total (mg/kg)	8260C	9	0.33	0.06 U	0.06 U	0.06 U	1	0.15 U	0.35	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Fuel Additives and Blending Compounds														
1,2-Dibromoethane (EDB; mg/kg)	8260C	0.005	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane (EDC; mg/kg)	8260C		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methyl tert-butyl ether (MTBE; mg/kg)	8260C	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Lead (mg/kg)	200.8	250	1.49	2.59	2.31	1.90	3.46	2.59	3.82	2.18	2.55	1.81	7.26	1.85
Other Petroleum Compounds														
Naphthalene (mg/kg)	8270D SIM	5	0.05 U	0.05 U	0.05 U	0.05 U	0.12	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.77	0.01 U
Isopropylbenzene (mg/kg)	8270D SIM						2.4	0.05 U	1	0.05 U	0.05 U	0.05 U	0.64	0.05 U
n-Propylbenzene (mg/kg)	8270D SIM						3.9	0.05 U	3.3	0.05 U	0.05 U	0.05 U	1.1	0.05 U
1,2,4-Trimethylbenzene (mg/kg)	8270D SIM						22	0.05 U	24	0.05 U	0.05 U	0.05 U	1.7	0.05 U
1,3,5-Trimethylbenzene (mg/kg)	8270D SIM						12	0.05 U	14	0.05 U	0.05 U	0.05 U	1.8	0.05 U
n-Butylbenzene (mg/kg)	8270D SIM						NR	NR	NR	NR	NR	NR	NR	NR
sec-Butylbenzene (mg/kg)	8270D SIM						0.86	0.05 U	0.6	0.05 U	0.05 U	0.05 U	1.1	0.05 U
tert-Butylbenzene (mg/kg)	8270D SIM						0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Isopropyltoluene (mg/kg)	8270D SIM						NR	NR	NR	NR	NR	NR	NR	NR
p-Isopropyltoluene (mg/kg)	8270D SIM						1.3	0.05 U	0.96	0.05 U	0.05 U	0.05 U	1.5	0.05 U
Other Compounds														
Chlorinated VOCs (mg/kg)	8260C						ND	ND	ND	ND	ND	ND	ND	ND
PCB mixtures (mg/kg)		1												

Notes:
Bold highlighted font indicates exceedance of most conservative screening level.
Potential chemicals of concern include gasoline-range organics from Table 830-1 in Model Toxics Control Act.
ft = feet
mg/kg = milligrams per kilogram
MTCA = Model Toxics Control Act
NR = not reported
U = analyte was not detected at or above the reported result.
NWTPH = Northwest total petroleum hydrocarbon method
WTPH = Washington total petroleum hydrocarbon method
HCID = hydrocarbon identification analysis

Table 2 Soil Sample Results Near Former Paint Booth

Project No. 080190, Former Walker Chevrolet Site (VCP No. SW1040)
633 Division Avenue, Tacoma, Washington

Description/Chemical Name	Laboratory Method	Soil, MTCA Method A, Unrestricted Land Use, Table Value (mg/kg)	Soil, MTCA Method B, Table Value (mg/kg)	D1 7/20/1994	D2 7/20/1994	D1-5.5 8/2/1994	D2-4.5 8/2/1994	D3-2 8/2/1994	D4-3 8/2/1994	D5-6 9/6/1994	D5-7.5 9/6/1994	D5-9 9/6/1994	D5-10 9/6/1994	D6-5 9/6/1994	D6-8 9/6/1994	D7-4 9/6/1994	D8-5 9/6/1994	D9-5 9/6/1994
Sample Depth				Sediment Inside Drain	Sediment Inside Drain	5.5 ft	4.5 ft	2 ft	3 ft	5 ft	7.5 ft	9 ft	10 ft	5 ft	8 ft	4 ft	5 ft	5 ft
Total Petroleum Hydrocarbons (TPH)																		
TPH, Gasoline-Range (mg/kg)	NWTPH-Gx	100																
TPH, Diesel-Range (mg/kg)	NWTPH-Dx	2,000																
TPH, Motor Oil-Range (mg/kg)	NWTPH-Dx	2,000																
TPH, Gasoline-Range (mg/kg)	WTPH-HCID, 418.1	100								20 U			20 U	100	20 U	20 U	20 U	20 U
TPH, Diesel-Range (mg/kg)	WTPH-HCID, 418.1	2,000								50 U			50 U	50 U	50 U	50 U	50 U	50 U
TPH, Heavy Oil-Range (mg/kg)	WTPH-HCID, 418.1	2,000								250			250	100 U	100 U	100 U	100 U	100 U
TPH, Unidentified (mg/kg)	418.1	100				8,900	79	96	420		2,000	4,400						
Volatile Petroleum Compounds																		
Benzene (mg/kg)	8260C	0.03	18.2	0.59	0.025 U	0.24 U		0.005 U	0.005 U	0.005 U			0.024	0.05 U	0.005 U	0.005 U	0.005 U	0.005 U
Toluene (mg/kg)	8260C	7	6,400	20	0.025 U	55		0.013	0.007	0.096 B			0.72 B	1.6 B	0.37 B	0.011 B	0.014 B	0.005 U
Ethylbenzene (mg/kg)	8260C	6	8,000	10	0.025 U	2.2		0.005 U	0.005 U	0.005 U			0.13	0.69	0.012	0.005 U	0.005 U	0.005 U
Xylenes, total (mg/kg)	8260C	9	16,000	78	0.19	145		0.005 J	0.006	0.01			0.79	7.1	0.15	0.005 U	0.005 U	0.005 U
Fuel Additives and Gasoline Compounds																		
1,2-Dibromoethane (EDB; mg/kg)	8260C	0.005	0.5	1 U	0.05 U	0.46 U		0.01 U	0.01 U	0.01 U			0.01 U	0.1 U	0.01 U	0.01 U	0.01 U	0.01 U
1,2-Dichloroethane (EDC; mg/kg)	8260C		11	0.5 U	0.025 U	0.23 U		0.005 U	0.005 U	0.005 U			0.005 U	0.05 U	0.05 U	0.005 U	0.005 U	0.005 U
Methyl tert-butyl ether (MTBE; mg/kg)	8260C	0.1	555.6	NR	NR	NR		NR	NR	NR			NR	NR	NR	NR	NR	NR
Lead (mg/kg)	200.8	250		2,140	918	25												
Other Petroleum Compounds																		
n-Butylbenzene (mg/kg)	8260C		4000	17	0.025 U	0.46		0.005 U	0.005 U	0.005 U			0.015	0.19	0.005 U	0.005 U	0.005 U	0.005 U
sec-Butylbenzene (mg/kg)	8260C			14	0.025 U	0.46		0.005 U	0.005 U	0.005 U			0.022	0.069	0.005 U	0.005 U	0.005 U	0.005 U
Isopropylbenzene (mg/kg)	8260C			18	0.025 U	1.6		0.005 U	0.005 U	0.005 U			0.06	0.05 U	0.005 U	0.005 U	0.005 U	0.005 U
p-Isopropyltoluene (mg/kg)	8260C			15	0.025 U	0.46		0.005 U	0.005 U	0.005 U			0.015	0.062	0.005 U	0.005 U	0.005 U	0.005 U
Methylene chloride	8260C	0.02	480	2 U	0.475	0.92 U		0.02 U	0.02 U	0.020 B			0.028 B	0.2 U	0.039 B	0.041 B	0.048 B	0.02 U
4-Methyl-2-pentanone (MIBK) (mg/kg)	8260C			3.8 J	0.025 U	2.3 U		0.05 U	0.05 U	0.05 U			0.05 U	0.5 U	0.05 U	0.05 U	0.05 U	0.05 U
Naphthalene (mg/kg)	8260C	5	1,600	0.90 B	0.053 B	1.1		0.005 U	0.005 U	0.005 U			0.005 U	0.19	0.005 U	0.005 U	0.005 U	0.005 U
n-Propylbenzene (mg/kg)	8260C		8,000	34	0.025 U	1.5		0.005 U	0.005 U	0.005 U			0.05	0.099	0.005 U	0.005 U	0.005 U	0.005 U
1,2,4-Trimethylbenzene (mg/kg)	8260C			170	0.072	11		0.005 U	0.005 U	0.005 U			0.13	0.79	0.013	0.005 U	0.005 U	0.005 U
1,3,5-Trimethylbenzene (mg/kg)	8260C		800	65	0.064	5		0.005 U	0.005 U	0.005 U			0.07	0.3	0.006	0.005 U	0.005 U	0.005 U
Chlorinated VOCs																		
Tetrachloroethylene (mg/kg)	8260C	0.05	476	2.1	0.025 U	0.21 J		0.005 U	0.005 U	0.005 U			0.005 U	0.05 U	0.05 U	0.005 U	0.005 U	0.005 U
Trichloroethylene (mg/kg)	8260C	0.03	12	0.5 U	0.025 U	0.23 U		0.005 U	0.005 U	0.005 U			0.005 U	0.05 U	0.05 U	0.005 U	0.005 U	0.005 U
cis-1,2-Dichloroethylene (mg/kg)	8260C	-	160	0.5 U	0.025 U	0.23 U		0.005 U	0.005 U	0.005 U			0.005 U	0.05 U	0.05 U	0.005 U	0.005 U	0.005 U
Vinyl chloride (mg/kg)	8260C	-	0.67	1 U	0.05 U	0.46 U		0.01 U	0.01 U	0.01 U			0.01 U	0.1 U	0.1 U	0.01 U	0.01 U	0.01 U
Chlorobenzene (mg/kg)	8260C		1,600	21	0.025 U	0.23 U		0.005 U	0.005 U	0.005 U			0.005 U	0.05 U	0.05 U	0.005 U	0.005 U	0.005 U
1,2-Dichlorobenzene (mg/kg)	8260C		7,200	103	0.025 U	0.23 U		0.005 U	0.005 U	0.005 U			0.005 U	0.05 U	0.05 U	0.005 U	0.005 U	0.005 U
1,4-Dichlorobenzene (mg/kg)	8260C		5,600	82	0.025 U	0.23 U		0.005 U	0.005 U	0.005 U			0.005 U	0.05 U	0.05 U	0.005 U	0.005 U	0.005 U
Polycyclic Aromatic Hydrocarbons																		
Benz(a)anthracene (mg/kg)	8270D SIM		1.37															
Benzo(a)pyrene (mg/kg)	8270D SIM	0.1	0.137															
Benzo(b)fluoranthene (mg/kg)	8270D SIM		1.37															
Benzo(k)fluoranthene (mg/kg)	8270D SIM		13.7															
Chrysene (mg/kg)	8270D SIM		137															
Indeno(1,2,3-cd)pyrene (mg/kg)	8270D SIM		1.37															
Dibenz(a,h)anthracene (mg/kg)	8270D SIM		0.137															
carcinogenic PAHs TEQ (mg/kg) (calculated)		0.1																
Polychlorinated biphenyls (PCBs)																		
Aroclor 1221 (mg/kg)	8082A																	
Aroclor 1232 (mg/kg)	8082A																	
Aroclor 1016 (mg/kg)	8082A		3.6															
Aroclor 1242 (mg/kg)	8082A																	
Aroclor 1248 (mg/kg)	8082A																	
Aroclor 1254 (mg/kg)	8082A		0.5															
Aroclor 1260 (mg/kg)	8082A		0.5															
Aroclor 1262 (mg/kg)	8082A																	
Aroclor 1268 (mg/kg)	8082A																	
Polychlorinated biphenyl (PCB) mixtures		1	0.5															
Metals																		
Arsenic (mg/kg)	200.8	20	0.67	5 U	5 U	5 U												
Barium (mg/kg)	200.8	-	16,000	422	2,000	43.8												
Cadmium (mg/kg)	200.8	2	80	58.2	4.2	0.3 U												
Chromium (mg/kg)	200.8	2,000	120,000	110	927	18.6												
Lead (mg/kg)	200.8	250		2,140	918	25												
Mercury (mg/kg)	200.8	2		3 U	3 U	3 U												
Selenium (mg/kg)	200.8	-	400	8 U	8 U	8 U												
Silver (mg/kg)	200.8	-	400	0.7 U	0.7 U	0.7 U												

Notes:
Bold highlighted font indicates exceedance of most conservative screening level.
Blank cell indicate that compound was not analyzed.
B = Compound detected in laboratory blank, suggesting cross-contamination in laboratory.
U = analyte was not detected at or above the reported result.

NR = not reported
ft = feet
HCID = Hydrocarbon identification
mg/kg = milligrams per kilogram
MTCA = Model Toxics Control Act

TPH = total petroleum hydrocarbon

Sediment samples from drains D1 and D2 were removed in 1994.
Samples results provide an indication of source contamination.

Table 3 - Groundwater Volatile Organic Compound Sample Results
Project No. 050190 Morrell's Dry Cleaners Site (VCP No. SW1039) and Former Walker Chevrolet Site (VCP No. SW1040).
633 Division Avenue, Tacoma, Washington

Well ID	Screen Interval (feet bgs)	Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	Vinyl Chloride	Carbon Tetrachloride	Chloroform	Chloroethane
Method A, Groundwater CUL, Table Value (ug/L)			5	5	-	-	-	0.2	-	-	-
Federal and State Maximum Contaminant Level (ug/L)			5	5	70	100	7	2	5	80	-
Groundwater CUL (ug/L)			5	5	70	100	7	0.2	5	80	-
Advance Outwash Wells											
VW-1	60 - 65	6/25/07	1.3	<1	<1	<1	<1	<0.2	<1	<1	<1
Former Walker Chevrolet		1/30/08	<1	<1	<1	<1	<1	<0.2	<1	<1	<1
		10/2/08	<1	<1	<1	<1	<1	<0.2	<1	<1	<1
		5/11/09	<1	<1	<1	<1	<1	<0.2	<1	<1	<1
		12/22/10	<1	<1	<1	<1	<1	<0.2	<1	<1	<1
		2/7/12	<1	<1	<1	<1	<1	<0.2	<1	<1	<1
		1/10/14	<0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	0.33	<0.2
VW-2	60 - 65	6/25/07	2,800	1,600	7,100	7.4	<1	10	1.0	1	8.1
Morrell's Dry Cleaners		1/30/08	1,400	810	2,600	3	<1	<0.2	<1	2.5	<1
		10/2/08	1,900	880	2,900	5.3	<1	3.1	1.0	3.5	1.0
		5/12/09	1,600	930	2,400	5.7	ND	2.7	<1	4.0	<1
		12/22/10	2,100	1,100	2,100	4.8	<1	2.7	<1	5.0	<1
		2/7/12	1,600	810	1,400	<100	<100	<20	<100	<100	<100
		12/12/13	1,600	840	1,100	2.7	<1	0.61	<1	3.3	<1
		6/25/14	Injected 650 gallons of Biostimulant (a2h 403 lbs of 30% Factory Emulsified and 33 lbs of HRC Primer)								
		1/21/15	15	25	550	<1	<1	0.37	<1	<1	<1
		7/30/15	13	46	600	1.8	<1	11	-	-	<1
		9/8/15	24	65	610	2	1.6	17	-	-	<1
		2/2/16	22	100	640	1.8	4.2	11	-	-	<1
VW-5	60 - 65	1/22/08	67	3	13	<1	<1	<0.2	3.3	2.1	<1
Morrell's Dry Cleaners		1/30/08	31	1.1	4.6	<1	<1	<0.2	2.0	1.8	<1
		10/2/08	75	3.2	17	<1	<1	<0.2	1.2	1.9	<1
		5/11/09	17	1.1	4.1	<1	<1	<0.2	<1	<1	<1
		12/22/10	130	14	41	<1	<1	<0.2	3.2	2.9	<1
		2/7/12	110	8.7	25	<1	<1	<0.2	4.6	2.3	<1
		1/9/14	<0.2	0.45	<0.2	<0.2	<0.2	<0.2	<0.2	0.35	<0.2
		6/25/14	650 gallons of Biostimulant injected into VW-20, located 50 feet downgradient, potentially pushing injected groundwater								
		4/28/15	67	6.2	6.4	<1	<1	<0.2	2.1	1.1	<1
		9/9/15	31	3.6	3.6	<1	<1	<0.2	-	-	<1
		2/2/16	27	2.7	2.5	<1	<1	<0.2	-	-	<1
VW-7	60 - 65	1/22/08	6.6	<1	<1	<1	<1	<0.2	<1	<1	<1
Morrell's Dry Cleaners		1/30/08	1.6	<1	<1	<1	<1	<0.2	1.6	<1	<1
		10/2/08	<1	<1	<1	<1	<1	<0.2	1.5	<1	<1
		5/11/09	1.1	<1	<1	<1	<1	<0.2	2.0	<1	<1
		12/22/10	1.4	<1	<1	<1	<1	<0.2	3.3	<1	<1
		2/6/12	<1	<1	<1	<1	<1	<0.2	2.2	<1	<1
		1/7/14	1.4	<1	<1	<1	<1	<0.2	1.6	<1	<1
VW-8	51 - 61	4/22/08	1,300	780	2,400	6.3	<1	0.2	<1	2.5	<1
Morrell's Dry Cleaners		10/2/08	650	350	2,600	7.6	1.2	0.9	<1	2.5	<1
		5/12/09	740	370	2,600	3.7	ND	2.8	<1	2.5	<1
		12/22/10	470	150	1,800	3.3	3.7	1.4	<1	2.2	<1
		2/7/12	860	610	1,600	<100	<100	<20	<100	<100	<100
		12/17/13	860	660	1,300	<50	<50	<10	<50	<50	<50
		6/25/14	Injected 650 gallons of Biostimulant (a2h 403 lbs of 30% Factory Emulsified and 33 lbs of HRC Primer)								
		1/20/15	11	8.5	1,200	<5	6.4	0.4	<5	<5	<5
		7/30/15	6.5	13	740	1.1	1.5	0.9	-	-	<1
		9/10/15	13	13	1,600	1.5	4.2	1.3	-	-	<1
		2/1/16	25	15	830	1.2	2.5	7.4	-	-	<1
VW-11	53 - 63	6/12/09	<1	2.3	<1	<1	<1	<0.2	1.4	1.9	<1
Former Walker Chevrolet		12/22/10	<1	4.6	<1	<1	<1	<0.2	2.8	2.0	<1
		1/23/14	<1	1.4	<1	<1	<1	<0.2	<1	<1	<1
		3/30/15	<1	3	<1	<1	<1	<0.2	1.2	1.1	<1
		10/7/15	<1	3.2	<1	<1	<1	<0.2	<1	<1	<1
		2/3/16	<1	3.1	<1	<1	<1	<0.2	<1	<1	<1
VW-15 (angled with 37 degrees vertical angle)	44 - 60	12/17/13	410	110	280	<10	<10	<2	<10	<10	<10
Morrell's Dry Cleaners		12/17/13	410	110	270	<10	<10	<2	<10	<10	<10
		6/25/14	Injected 650 gallons of Biostimulant (a2h 403 lbs of 30% Factory Emulsified and 33 lbs of HRC Primer)								
		9/8/15	56	83	220	<1	<1	0.8	-	-	<1
		2/2/16	43	25	230	<1	<1	7.4	-	-	<1
VW-16 (angled with 23 degrees vertical angle)	41 - 60	12/13/13	450	93	350	<1	<1	0.43	2.2	2.5	<1
Morrell's Dry Cleaners		6/25/14	Injected 650 gallons of Biostimulant (a2h 403 lbs of 30% Factory Emulsified and 33 lbs of HRC Primer)								
		1/21/15	11	6.3	180	<5	<5	2.8	<5	<5	<5
VW-17 (angled with 32 degrees vertical angle)	43 - 60	12/13/13	170	24	81	<1	<1	<0.2	3	2.4	<1
Morrell's Dry Cleaners		6/24/14	Injected 650 gallons of Biostimulant (a2h 403 lbs of 30% Factory Emulsified and 33 lbs of HRC Primer)								
VW-18 (angled with 45 degrees vertical angle)	45 - 60	12/12/13	430	87	330	<1	<1	0.61	<1	1.3	<1
Morrell's Dry Cleaners		6/24/14	Injected 650 gallons of Biostimulant (a2h 403 lbs of 30% Factory Emulsified and 33 lbs of HRC Primer)								
VW-19	45 - 60	1/8/14	62	48	20	<1	<1	<0.2	1.5	3.8	<1
Morrell's Dry Cleaners		6/24/14	Injected 650 gallons of Biostimulant (a2h 403 lbs of 30% Factory Emulsified and 33 lbs of HRC Primer)								
		1/21/15	8.7	<5	45	<5	<5	<1	<5	<5	<5
		9/9/15	7.4	3.9	35	<1	<1	1.5	-	-	<1
		2/2/16	8.5	5.1	43	<1	<1	1.5	-	-	<1
VW-20	45 - 60	1/8/14	160	18	43	<1	<1	<0.2	3.6	2.2	<1
Morrell's Dry Cleaners		6/24/14	Injected 650 gallons of Biostimulant (a2h 403 lbs of 30% Factory Emulsified and 33 lbs of HRC Primer)								
		1/20/15	7.4	6.3	78	<1	<1	1.8	<1	<1	<1
		9/9/15	11	8.8	150	<1	<1	1.6	-	-	<1
		2/2/16	<1	<1	250	<1	<1	1.9	-	-	<1
VW-21	45 - 60	12/17/13	650	130	450	<10	<10	<2	<10	<10	<10
Morrell's Dry Cleaners		6/25/14	Injected 650 gallons of Biostimulant (a2h 403 lbs of 30% Factory Emulsified and 33 lbs of HRC Primer)								
		1/20/15	15	12	270	<5	<5	<1	<5	<5	<5
		9/8/15	7.1	9.2	610	1.6	<1	8.1	-	-	<1
		2/2/16	18	17	650	1.7	<1	9.7	-	-	<1
Vashon Glacial Deposit Wells											
VW-80	98 - 118	5/11/09	<1	<1	11	<1	<1	<0.2	1.9	<1	<1
Morrell's Dry Cleaners		12/22/10	<1	<1	21	<1	<1	<0.2	2.0	<1	<1
		2/6/12	<1	<1	26	<1	<1	<0.2	1.8	<1	<1
		1/10/14	<0.2	<0.2	42	<0.2	<0.2	<0.2	1.7	0.63	<0.2
		4/28/15	<1	<1	54	<1	<1	<0.2	1.7	<1	<1
		9/8/15	<1	<1	65	<1	<1	<0.2	-	-	<1
		2/2/16	<1	<1	62	<1	<1	<0.2	-	-	<1
VW-120	113 - 133	12/22/10	6.1	<1	22	<1	<1	<0.2	<1	<1	<1
Morrell's Dry Cleaners		2/6/12	<1	<1	17	<1	<1	<0.2	<1	<1	<1
		1/10/14	0.7	0.34	22	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		4/29/15	<1	<1	13	<1	<1	<0.2	<1	<1	<1
		9/10/15	<1	<1	9.1	<1	<1	<0.2	-	-	<1
		2/2/16	<1	<1	9.2	<1	<1	<0.2	-	-	<1
VW-130	128 - 148	12/22/10	16	3.2	53	<1	<1	<0.2	<1	<1	<1
Morrell's Dry Cleaners		2/7/12	4.2	2.4	23	<1	<1	<0.2	<1	<1	<1
		12/16/13	6.9	3.7	32	<1	<1	<0.2	<1	<1	<1
		4/29/15	<1	<1	14	<1	<1	<0.2	<1	<1	<1
		9/9/15	4.1	2.2	22	<1	<1	<0.2	-	-	<1
		2/2/16	2.2	2.1	23	<1	<1	<0.2	-	-	<1
VW-140	123 - 143	2/6/12	4.2	3.3	23	<1	<1	<0.2	<1	<1	<1
Morrell's Dry Cleaners		1/23/14	2.4	1.0	45	<1	<1	<0.2	<1	<1	<1
		4/29/15	2.2	<1	25	<1	<1	<0.2	<1	<1	<1
		9/9/15	9.2	3.9	15	<1	<1	<0.2	-	-	<1
		2/2/16	1.8	<1	22	<1	<1	<0.2	-	-	<1

Notes:
BOLD Highlighted signifies exceedance of Proposed Groundwater CUL (most stringent of MTCA Method A, Table Value and Federal and State MCL)
All values are in units of milligrams per liter (ug/L)
Laboratory method 8260C
1,1-DCE = 1,1-dichloroethylene
bgs = below ground surface
cis-1,2-DCE = cis-1,2-dichloroethylene
MCL = maximum contaminant level
MTCA = Model Toxics Control Act
ND = not determined
PCE = tetrachloroethylene
TCE = trichloroethylene
trans-1,2-DCE = trans-1,2-dichloroethylene

Table 4 Groundwater Sample Results from MW-11 Near Former Paint Booth

Project No. 080190, Former Walker Chevrolet Site (VCP No. SW1040)
633 Division Avenue, Tacoma, Washington

Chemical Name	Laboratory Method	Groundwater, Method A, Table Value (µg/L)	Federal and State Maximum Contaminant Level (µg/L)	MW-11 6/12/2009	MW-11 12/22/2010	MW-11 1/23/2014	MW-11 3/20/2015	MW-11 4/28/2015	MW-11 10/07/2015	MW-11 2/3/2016
Site Name				Former Walker Chevrolet						
Location Description				Former Paint Booth Area						
Total Petroleum Hydrocarbons										
Gasoline-Range Hydrocarbons (µg/L) (no detectable benzene)	NWTPH-Gx	1,000				100 U	100 U			
Diesel-Range Hydrocarbons (µg/L)	NWTPH-Dx	500				50 U	82 X			
Oil-Range Hydrocarbons (µg/L)	NWTPH-Dx	500				250 U	250 U			
Volatile Organic Compounds (COPCs and Other Detected Compounds)										
Benzene (µg/L)	8260C	5	5	1 U	0.35 U	0.35 U	0.35 U		0.35 U	0.35 U
Toluene (µg/L)	8260C	1,000	1,000	1 U	1 U	1 U	1 U		1 U	1 U
Ethylbenzene (µg/L)	8260C	700	700	1 U	1 U	1 U	1 U		1 U	1 U
Xylenes, total (µg/L)	8260C	1,000	10,000	3 U	3 U	3 U	3 U		3 U	3 U
Tetrachloroethylene (µg/L)	8260C	5	5	1 U	1 U	1 U	1 U		1 U	1 U
Trichloroethylene (µg/L)	8260C	5	5	2.3	4.6	1.4	3		3.2	3.1
cis-1,2-Dichloroethylene (µg/L)	8260C		70	1 U	1 U	1 U	1 U		1 U	1 U
trans-1,2-Dichloroethylene (µg/L)	8260C		100	1 U	1 U	1 U	1 U		1 U	1 U
1,1-Dichloroethylene (µg/L)	8260C		7	1 U	1 U	1 U	1 U		1 U	1 U
Vinyl Chloride (µg/L)	8260C	0.2	2	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U	0.2 U
Carbon Tetrachloride (µg/L)	8260C		5	1.4	2.8	1 U	1.2		1 U	1 U
Chloroform (µg/L)	8260C		80	1.9	2	1 U	1.1		1 U	1 U
1,4-Dioxane	8260C					10 U	0.4 U			
Polycyclic Aromatic Hydrocarbons										
Benz(a)anthracene (µg/L)	8270D SIM					0.05 U				
Benzo(a)pyrene (µg/L)	8270D SIM	0.1	0.2			0.05 U				
Benzo(b)fluoranthene (µg/L)	8270D SIM					0.05 U				
Benzo(k)fluoranthene (µg/L)	8270D SIM					0.05 U				
Chrysene (µg/L)	8270D SIM					0.05 U				
Dibenzo(a,h)anthracene (µg/L)	8270D SIM					0.05 U				
Indeno(1,2,3-cd)pyrene (µg/L)	8270D SIM					0.05 U				
Total cPAHs TEQ (µg/L; calculated)	8270D SIM	0.1				ND				
Naphthalene (µg/L)	8260C/ 8270D SIM	160		1 U	1 U	0.15	1 U		1 U	1 U
Fuel Additives & RCRA Metals										
1,2-Dibromethane (EDB) (µg/L)	8260C	0.01					0.01 U		1 U	1 U
Arsenic (µg/L), total	200.8	5					5.15	6.29		
Arsenic (µg/L), dissolved	200.8	5						1 U		
Barium (µg/L), total	200.8						57.9	73.2		
Barium (µg/L), dissolved	200.8							12.5		
Cadmium (µg/L), total	200.8	5					1 U	1 U		
Cadmium (µg/L), dissolved	200.8	5						1 U		
Chromium (µg/L), total	200.8	50					24	28.1		
Chromium (µg/L), dissolved	200.8	50						1.76		
Lead (µg/L), total	200.8	15	15			2.44	4.99	6.2		
Lead (µg/L), dissolved	200.8	15						1 U		
Mercury (µg/L), total	200.8	2					1 U	1 U		
Mercury (µg/L), dissolved	200.8	2						1 U		
Selenium (µg/L), total	200.8						1 U	1 U		
Selenium (µg/L), dissolved	200.8							1 U		
Silver (µg/L), total	200.8						1 U	1 U		
Silver (µg/L), dissolved	200.8							1 U		
Polychlorinated Biphenyls (PCBs)										
PCB Mixtures (µg/L)	8082A	0.1	0.5			0.1 U				
Natural Attenuation Parameters										
Dissolved oxygen (mg/L)						2.3	2.6		2.7	2.5
Oxidation-reduction potential (mV)						73	125		57	113

Notes:
Blank cell = indicate not sampled or no standard exists
COPC = chemical of potential concern
cPAH = carcinogenic polycyclic aromatic hydrocarbon
mg/L = milligrams per liter
MTCA = Model Toxics Control Act
mV = millivolts
TEQ = toxic equivalent quotient
U = analyte was not detected at or above the reported result
µg/L = micrograms per liter
Dissolved metals were filtered through 0.45 micron filter

Table 7 - Soil Sample Results Near Former Paint Booth

Project No. 060190, Former Walker Chevrolet Site (VCP No. SW1040)
633 Division Avenue, Tacoma, Washington

Description/Chemical Name	Laboratory Method	Soil, MTCA Method A, Unrestricted Land Use, Table Value (mg/kg)	Soil, MTCA Method B, Table Value (mg/kg)	PB-2 8/31/2006	PB-3 8/31/2006	PBLS 10/20/2006	PBLS 10/20/2006	PERC 10/20/2006	PBWC 10/20/2016
Sample Depth				0 ft	4 ft	2 ft	3 ft	25 ft	2 ft
Total Petroleum Hydrocarbons (TPH)									
TPH, Gasoline-Range (mg/kg)	NWTPH-Gx	100			30	ND	ND	ND	ND
TPH, Diesel-Range (mg/kg)	NWTPH-Dx	2,000			ND	ND	ND	ND	ND
TPH, Motor Oil-Range (mg/kg)	NWTPH-Dx	2,000			ND	ND	ND	ND	87
TPH, Gasoline-Range (mg/kg)	WTPH-HCID, 418.1	100							
TPH, Diesel-Range (mg/kg)	WTPH-HCID, 418.1	2,000							
TPH, Heavy Oil-Range (mg/kg)	WTPH-HCID, 418.1	2,000							
TPH, Unfractionated (mg/kg)	418.1	100							
Volatile Petroleum Compounds									
Benzene (mg/kg)	8260C	0.03	18.7	0.02 U	0.02 U				
Toluene (mg/kg)	8260C	7	6,400	0.05 U	0.05 U				
Ethylbenzene (mg/kg)	8260C	6	8,000	0.05 U	0.05 U				
Xylenes, total (mg/kg)	8260C	9	16,000	0.15	0.12				
Fuel Additives and Blending Compounds									
1,2-Dibromoethane (EDB; mg/kg)	8260C	0.005	0.5	0.05 U	0.05 U				
1,2-Dichloroethane (EDC; mg/kg)	8260C		11	0.05 U	0.05 U				
Methyl tert-butyl ether (MTBE; mg/kg)	8260C	0.1	5004	0.05 U	0.05 U				
Lead (mg/kg)	200.8	250		1.71	1.10				
Other Petroleum Compounds									
n-butylbenzene (mg/kg)	8260C		4000	NR	NR				
sec-butylbenzene (mg/kg)	8260C			0.05 U	0.05 U				
isopropylbenzene (mg/kg)	8260C			0.05 U	0.05 U				
p-isopropyltoluene (mg/kg)	8260C			0.05 U	0.05 U				
Methylene chloride	8260C	0.02	400	0.5 U	0.5 U				
4-Methyl-2-pentanone (MIBK) (mg/kg)	8260C			0.5 U	0.5 U				
Naphthalene (mg/kg)	8260C	5	1,600	0.05 U	0.05 U				
n-propylbenzene (mg/kg)	8260C		8,000	0.05 U	0.05 U				
1,2,4-Trimethylbenzene (mg/kg)	8260C			0.05 U	0.05 U				
1,3,5-Trimethylbenzene (mg/kg)	8260C		800	0.05 U	0.05 U				
Chlorinated VOCs									
Tetrachloroethylene (mg/kg)	8260C	0.05	476	0.16	0.76				
Trichloroethylene (mg/kg)	8260C	0.03	12	0.02 U	0.02 U				
cis-1,2-dichloroethylene (mg/kg)	8260C	-	160	0.05 U	0.05 U				
Vinyl chloride (mg/kg)	8260C	-	0.67	0.01 U	0.01 U				
Chlorobenzene (mg/kg)	8260C		1,600	0.05 U	0.05 U				
1,2-Dichlorobenzene (mg/kg)	8260C		7,200	0.05 U	0.05 U				
1,4-Dichlorobenzene (mg/kg)	8260C		5,600	0.05 U	0.05 U				
Polycyclic Aromatic Hydrocarbons									
Benz(a)anthracene (mg/kg)	8270D SIM		1.37						
Benzo(a)pyrene (mg/kg)	8270D SIM	0.1	0.137						
Benzo(b)fluoranthene (mg/kg)	8270D SIM		1.37						
Benzo(k)fluoranthene (mg/kg)	8270D SIM		13.7						
Chrysene (mg/kg)	8270D SIM		137						
Indeno(1,2,3-cd)pyrene (mg/kg)	8270D SIM		1.37						
Dibenz(a,h)anthracene (mg/kg)	8270D SIM		0.137						
carcinogenic PAHs TLD (mg/kg) (calculated)		0.1							
Polychlorinated biphenyls (PCBs)									
Aroclor 1221 (mg/kg)	8082A								
Aroclor 1232 (mg/kg)	8082A								
Aroclor 1016 (mg/kg)	8082A		5.6						
Aroclor 1242 (mg/kg)	8082A								
Aroclor 1248 (mg/kg)	8082A								
Aroclor 1254 (mg/kg)	8082A		0.5						
Aroclor 1260 (mg/kg)	8082A		0.5						
Aroclor 1262 (mg/kg)	8082A								
Aroclor 1268 (mg/kg)	8082A								
Polychlorinated biphenyl (PCB) mixtures		1	0.5						
Metals									
Arsenic (mg/kg)	200.8	20	0.67						
Barium (mg/kg)	200.8	-	16,000						
Cadmium (mg/kg)	200.8	2	80						
Chromium (mg/kg)	200.8	2,000	120,000						
Lead (mg/kg)	200.8	250							
Mercury (mg/kg)	200.8	2							
Selenium (mg/kg)	200.8	-	400						
Silver (mg/kg)	200.8	-	400						

Notes:
Bold highlighted font indicates exceedance of most conservative screening level.
Blank cell indicate that compound was not analyzed.
B = Compound detected in laboratory blank, suggesting cross-contamination in laboratory.
U = analyte was not detected at or above the reported result.

NR = not reported
ft = feet
HCID = Hydrocarbon identification
mg/kg = milligrams per kilogram
MTCA = Model Toxics Control Act

Table 5 Indoor, Ambient, and Sub-Slab Air Sample Results Near Former Paint Booth

Project No. 050190, Former Walker Chevrolet Site (VCP No. SW1040)
633 Division Avenue, Tacoma, Washington

Description/ Chemical Name	Laboratory Method	Acceptable Indoor Air Screening Level (CL_{IA}), MTCA Method B, Air, Screening Level	Acceptable Indoor Air Screening Level (CL_{IA}), Modified MTCA Method B, Air, Screening Level	Permissible Exposure Limit (ppm) (8-hour TWA)	Molecular Weight	Permissible Exposure Limit (PEL) ($\mu g/m^3$) at Standard Temperature and Pressure (8-hour TWA)	Indoor Air, Above Former Paint Booth	Indoor Air, Above Former Paint Booth	Outdoor Air, Ambient Conditions	SG8 SG5 Screening Level in Soil Gas Protective of Method B Indoor Air (CL_{SG})	Screening Level in Soil Gas Protective of Method C Indoor Air (CL_{SG})	Sub-slab Air, Beneath Former Paint Booth			Sub-slab Air, Adjacent to Former Paint Booth	Sub-slab Air, Beneath Former Paint Booth	Sub-slab Air, Near Hydraulic Oil
Location							In preparation outside and north of produce cooler	Inside current produce cooler and former paint booth area	Parking lot on west side of North 1st Street			East side of paint booth	West side of paint booth	Middle of paint booth	Beneath concrete sidewalk adjacent to building and former roll-up door for paint booth	Beneath concrete flooring in preparation area outside and north of produce cooler	Beneath tile flooring northeast of meat counter near Borings B11 and B21
Sample ID							IA-HPB-032315	Indoor-012214 B	Outdoor Air-012214 B			CV-1	CV-2	CV-3	Subslab-012314 1	SS-HPB-032015 1	SSV-051016 0.5
Sample duration (hours)																	
Date and time collected							3/23/15 2:21 PM	1/22/14 3:55 PM	1/22/14 4:15 PM			5/8/2008	5/8/2008	5/8/2008	1/23/14 1:15 PM	3/20/15 7:10 AM	5/11/16 4:06 AM
		ug/m³	ug/m³	ppm	g/mole	ug/m³	ug/m³	ug/m³	ug/m³	ug/m³	ug/m³	ug/m³	ug/m³	ug/m³	ug/m³	ug/m³	ug/m³
PCE	TO-15	0.02	40.4	25	166.8419	170,497	2.79	0.51	<0.21	321	1,350	110	1,000	160	270	<2.03	<0.68
TCE	TO-15	0.37	1.55	50	132.3939	270,579	<0.0914	<0.32	<0.17	12.3	51.8	<20	<20	<20	1.2	<1.07	<0.54
cis-1,2-DCE	TO-15	-	-	200	97.0959	800,652	<0.0793	<0.24	<0.12	-	-	<50	<50	<50	<0.27	<0.793	<0.4
trans-1,2-DCE	TO-15	-	-	200	97.0959	800,652	<0.0238	<1.2	<0.01	-	-	<50	<50	<50	<1.3	<0.793	<0.4
Vinyl chloride	TO-15	0.28	1.18	1	63.4959	2,595	<0.217	<0.077	<0.04	9.33	39.2	<200	<200	<200	<0.087	<0.511	<0.26
Benzene	TO-15	0.321	1.35	1	78.1134	3,193	2.29	NA	NA	10.7	44.94	<20	<20	<20	NA	2.09	0.97
Toluene	TO-15	2,220	9,018	100	92.1402	376,635	10.9	NA	NA	76,300	321,000	130	240	160	NA	3.04	8.7
Ethylbenzene	TO-15	457	1,919	100	106.167	433,972	1.77	NA	NA	15,200	64,000	<100	<100	<100	NA	12.8	4.8
Xylenes	TO-15	45.7	192	100	106.167	433,972	5.31	NA	NA	1,520	6,400	<100	150	220	NA	132.3	31
Naphthalene	TO-15	0.0735	0.309	10	128.1732	52,392	<1.57			2.45	10.29					<1.57	1.6
Aliphatic hydrocarbon (EC5-8)	TO-15	2,700	11,340				104	NA	NA	90,000	378,000					215	
Aliphatic hydrocarbon (EC9-12)	TO-15	140	588				807	NA	NA	4,667	19,600					311	
Aromatic hydrocarbon (EC9-10)	TO-15	180	756				576	NA	NA	6,000	25,200					221	

Notes:
Bold highlighted font indicates exceedance of most conservative screening level.
Dashes indicate no value available.
DCE = dichloroethylene
$\mu g/m^3$ = micrograms per cubic meter
NA = not analyzed
PCE = tetrachloroethylene
CL_{IA} = Acceptable indoor air screening level.
CL_{SG} = Screening level in soil gas protective of indoor air.
TCE = trichloroethylene
VAF = Vapor attenuation factor (unitless); default value of 0.03 should be assumed in Tier I Evaluations (www.ecy.wa.gov/programs/tcp/policies/vaporintrusion/vig.html).
$CL_{SG} = CL_{IA} / VAF$ (Equation 2 in Draft Vapor Intrusion Guidance, Ecology, 2009).
Ecology, 2009, Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action, Publication No. 09-09-047.
Modified Method B screening levels calculated using an exposure factor of 40 hours per week.