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DEPARTMENT OF ECOLOGY
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September 23, 2021

Doug Hillman
Aspect Consulting, LLC
710 2nd Ave
Seattle WA 98104
dhillman@aspectconsulting.com

Re: Opinion on Proposed Cleanup of the following Site:

- **Property Address:** 608 North First Street, Tacoma, Pierce County, WA 98403
- **Facility / Site Name:** Morrells Dry Cleaners
- **Facility/Site ID:** 18489568
- **Cleanup Site ID.:** 386
- **VCP Project No.:** SW1039

Dear Doug Hillman:

The Washington State Department of Ecology (Ecology) received your request for an opinion on the independent cleanup of the Morrells Dry Cleaners facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the [Model Toxics Control Act \(MTCA\)](#),¹ [chapter 70A.305 Revised Code of Washington \(RCW\)](#).²

Issues Presented and Opinion

On June 7, 2021, Ecology received a Site wide RI/FS Work Plan (the Report³). You requested that Ecology concur with the proposed data gap evaluation to complete the remedial investigation.

Ecology appreciates the substantial remedial efforts that you have completed to investigate and clean up contamination at the Site and has summarized our comments on the Report below.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, chapter 70A.305 RCW,⁴ and its implementing regulations, chapter 173-340 WAC (collectively “substantive requirements of MTCA”). The analysis is provided below.

¹ <https://fortress.wa.gov/ecy/publications/SummaryPages/9406.html>

² <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305>

³ Aspect Consulting LLC, *Site wide RI/FS Work Plan, Morrell's Dry Cleaners*, June 4, 2021.

⁴ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305>

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 into the environment:

- The chlorinated solvent Tetrachloroethylene (PCE) and its degradation products trichloroethylene (TCE), 1,1-dichloroethylene (DCE); including cis-1,2-DCE and 1,2-trans-DCE, and vinyl chloride.
- Other Volatile Organic Carbons detected during remedial investigation including 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, p-Isopropyltoluene, Sec-Butylbenzene, n-Propylbenzene, Methylene Chloride, 1,2-Dibromo-3-Chloropropane, 2-Hexanone, Bromomethane, CFC-11, CFC-12, Chloroethane, Chloromethane, Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Methylene Chloride, Tert-Butylbenzene, Cumene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, Hexachlorobutadiene, Hexane, Naphthalene, and Chloroform.
- Petroleum Hydrocarbons and related petroleum constituents including benzene, toluene, ethylbenzene, and total xylenes.
- Metals including lead, arsenic, and chromium.

Identification of Other Sites that may affect the parcel(s) of real property associated with this Site:

- The Property is located within the projected boundaries of the Tacoma Smelter Plume facility (FSID: #89267963).
- The Property is located adjacent to the Bruce Titus Chevrolet facility (FSID: #3427832).
- The Property is located southwest of the Key Bank Stadium Branch facility (FSID: #33263239) and east of the North Gas Station facility (FSID: #1265285).

At this time, Ecology has insufficient information to determine if the Property is actually affected. This opinion does not apply to any contamination associated with these other facilities.

Basis for the Opinion

This opinion is based on the information contained in the documents listed in **Enclosure A**.

Documents listed in Enclosure A are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. Information on obtaining the records can be

found on [Ecology's public records requests web page](#).⁵ Some site documents may be available on [Ecology's Cleanup Site Search web page](#).⁶ This opinion is void if any of the information contained in the documents is materially false or misleading.

Analysis of the Cleanup

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

1. Characterization of the Site.

Historical characterization of the Site is provided in the Report and Ecology's January 6, 2021 opinion letter.

Ecology has determined your characterization of the Site is not sufficient to establish cleanup standards for the Site and select a cleanup.

Ecology Comments:

Air: To address the remaining data gaps for the air pathway Aspect proposed two potential options: advance two permanent vapor points (VP-8 and VP-9) within the City of Tacoma right-of-way along Tacoma Avenue and North First Street (pending permit approval) or install temporary vapor points within the Morell's parking lot (**Enclosure B - Aspect Figure 9**).

Air Pathway: Ecology does not concur that the proposed approach will sufficiently delineate the air pathway. Additional sampling and evaluation is needed.

- a. Sub slab samples were last collected during 2016, and indoor air samples were last collected during 2012. For Ecology to fully evaluate the current air pathway, additional sub slab and indoor sampling in addition to what was proposed is requested.
- b. Additional sub-slab soil gas and indoor air samples should be collected from beneath the Morrell's Dry Cleaners building to evaluate the success of the SVE system. Sub-slab soil gas and indoor air samples should also be collected from beneath the Tease Chocolate, 4 The Boys Company, LLC and Stadium, LLC buildings. If access cannot be granted for these locations, then near-slab (within 10 feet horizontally of the foundations)⁷ soil gas samples should be collected. Near slab samples should be collected from each side of

⁵ <https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests>

⁶ <https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=386>

⁷New Jersey Department of Environmental Protection, Vapor Intrusion Technical Guidance, Site Remediation Program, March 2013 (version 3.1).

the potentially impacted buildings and “as close to the buildings as possible” (EPA 2015).⁸ Per Ecology’s 2009, draft vapor intrusion guidance,⁹ due to the possibility of diluting the collected soil gas with atmospheric air, soil gas and/or near-slab samples should not be collected from depths shallower than five feet below ground surface ([bgs] or less than two to five feet below the depth of the foundation unless they are sub-slab samples).

- c. Based on concerns regarding collecting indoor air samples within an active dry cleaning facility Ecology recommends that you measure and report on the differential and barometric pressures beneath the slab and inside the building to determine if the pressure beneath the slab can be greater than indoor air. A pressure gradient from sub-slab to indoor air could result in sub-slab soil vapor migrating into the indoor air space through advection. Differential pressures should be measured using a micro-manometer that is auto-zeroing and has a pressure differential sensitivity to 0.001 inches of water. Differential pressures should be recorded using a data logger for at least 48 hours (preferably one week) prior to sampling to assess fluctuations (if any) of cross-slab differential pressure. Ecology recommends completing VI assessment work during late fall or winter months.
- d. An appropriate equilibration time needs to be observed when collecting sub-slab and soil gas samples. The necessary equilibration time depend on the type of sample probe and installation method that is used. Please consult Ecology for questions about the appropriate equilibration time. For example, EPA (2006) has recommended a 2-hour equilibration time for sub-slab probes. Please observe a 2-hour equilibration time, prior to sampling, following sub-slab sample point installation.
- e. Based on the presence TCE across the Site Ecology also requests that you assess the acute TCE risk as discussed in Ecology's [Implementation Memorandum No. 22: Vapor Intrusion \(VI\) Investigations and Short-term Trichloroethylene \(TCE\) Toxicity](#).¹⁰

Groundwater: Groundwater beneath the Site is impacted in both the shallow (advance outwash) and deeper (Olympia bed interglacial deposits) water bearing zones. To address the remaining groundwater characterization data gaps in the deeper water water-bearing zone, Aspect proposes to advance monitoring well MW-15D within the intersection of Tacoma Avenue and North First Street to a total depth of 140 feet below ground surface (**Enclosure B - Aspect Figure 9**).

In addition, new monitoring well MW-15D and existing monitoring wells MW-5, MW-8D, MW-12D, MW-13D, MW-14D, MW-17, MW-21, MW-24, MW-25, MW-28, MW-31, MW-32, and MW-33 are proposed to be sampled.

⁸ OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air. U.S. Environmental Protection Agency (EPA), OSWER Publication 9200.2-154, June 2015; and, Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites, EPA 510-R-15-001, June 2015.

⁹ *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action*. Washington State Department of Ecology, Toxics Cleanup Program, Publication No. 09-09-047, October 2009 Review Draft.

¹⁰ Ecology, Implementation Memorandum No. 22: Vapor Intrusion (VI) Investigations and Short-term Trichloroethylene (TCE) Toxicity, Publication No. 18-09-047, October 1, 2019. <https://fortress.wa.gov/ecy/publications/SummaryPages/1809047.html>

Deeper water water-bearing zone: Ecology concurs with the approach to install MW-15D within the deeper water bearing zone and understands the limitations posed by utilities in the immediate area. As proposed, Ecology concurs with the approach to continue monitoring at wells MW-8D, MW-12D, MW-13D, MW-14D, and MW-15D.

Shallow water water-bearing zone: Ecology does not concur that the nature and extent of groundwater contamination has been fully defined in the shallow-water bearing zone. Additional monitoring wells may be needed at the following locations:

- hydraulically cross/up-gradient from MW-33 as close as practicable to the estimated extent of groundwater in the advanced outwash.
- hydraulically up-gradient from monitoring wells MW-27/28.
- hydraulically down-gradient from MW-25 as close as practicable to the estimated extent of groundwater in the advanced outwash.

Additional monitoring wells along the estimated extent of groundwater in the advanced outwash is needed to determination if contaminated groundwater is migrating along this feature or not.

Ecology concurs with the approach to continue monitoring wells MW-5, MW-17, MW-21, MW-24, MW-25, MW-28, MW-31, MW-32, and MW-33 and requests that monitoring wells MW-2, MW-8, MW-15, MW-19, MW-26, MW-27, MW-29 be added to the monitoring program. Ecology also recommends the analysis of ethane and ethane in monitoring wells MW-2, MW-16, MW-17, and MW-18 to evaluate the effectiveness of dechlorination in the source zone.

Soil: To address the remaining soil characterization data gaps Aspect proposes to advance monitoring well MW-15D within the intersection of Tacoma Avenue and North First Street to a total depth of 140 feet below ground surface (**Enclosure B - Aspect Figure 5**).

Ecology concurs with the approach to collect additional soil characterization data at MW-15D. Ecology recommends that additional soil samples be collected at recommended monitoring wells to be installed with the shallow water bearing zone.

Ecology presumes a reasonable worst case scenario that PCE contamination extends laterally into Tacoma Avenue and North First Street and vertically to depths greater than 60 feet bgs.

Terrestrial Ecological Evaluation: Ecology has reviewed the updated Terrestrial Ecological Evaluation (TEE) for the Site and concurs with its conclusion.¹¹

2. Establishment of Cleanup Standards for the Site.

Cleanup Standards: Under MTCA, cleanup standards consist of three primary components; (a) points of compliance,¹² (b) cleanup levels,¹³ and (c) applicable state and federal laws.¹⁴ Ecology has determined the cleanup levels and points of compliance you established for the Site do not meet the substantive requirements of MTCA.

¹¹ WAC 173-340-7491(1)(a)

¹² WAC 173-340-200 "Point of Compliance."

¹³ WAC 173-340-200 "Cleanup level."

¹⁴ WAC 173-340-200 "Applicable state and federal laws," WAC 173-340-700(3)(c)

(a) Points of Compliance. Points of compliance are the specific locations at the Site where cleanup levels must be attained. For clarity, Ecology provides the following table of standard points of compliance that are applicable to this Site. Not all points of compliance are likely needed for use at this Site.

| Media | Points of Compliance |
|--|--|
| Soil-Direct Contact | Based on human exposure via direct contact, the standard point of compliance is throughout the Site from ground surface to fifteen feet below the ground surface. <i>WAC 173-340-740 (6)(d)</i> |
| Soil- Protection of Groundwater | Based on the protection of groundwater, the standard point of compliance is throughout the Site. <i>WAC 173-340-747</i> |
| Soil-Protection of Plants, Animals, and Soil Biota | Based on ecological protection, the standard point of compliance is throughout the Site from ground surface to fifteen feet below the ground surface. <i>WAC 173-340-7490(4)(b)</i> |
| Groundwater | Based on the protection of groundwater quality, the standard point of compliance is throughout the site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the Site. <i>WAC 173-340-720(8)(b)</i> |
| Groundwater-Surface Water Protection | Based on the protection of surface water, the standard point of compliance is all locations where hazardous substances are released to surface water. <i>WAC 173-340-730(6)</i> |
| Air Quality | Based on the protection of air quality, the point of compliance is indoor and ambient air throughout the Site. <i>WAC 173-340-750(6)</i> |
| Sediment | Based on the protection of sediment quality, compliance with the requirements of 173-204 WAC. <i>WAC 173-340-760</i> |

(b) Cleanup Levels: Cleanup screening levels are used to determine if cleanup standards are necessary for specific hazardous substances detected at a Site. Cleanup levels are the concentrations of a hazardous substance in specific media (soil, water, air, or sediment) that are determined to be protective of human health and the environment, and are needed when cleanup screening levels are exceeded.

At this Site, MTCA Method A and B unrestricted cleanup screening levels were used to evaluate contamination detected in soil, soil gas, air, and groundwater. MTCA Method A and B may be appropriate for use as cleanup levels, and the completion of the remedial investigation.

(c) Applicable Laws and Regulations: Ecology reviewed the identified additional applicable local, state, and federal laws and concurs with your evaluation.

3. Selection of Cleanup for the Site.

Ecology has determined that additional remedial investigation is necessary at the Site before selecting a cleanup action. Ecology encourages you to continue to take interim actions, according to WAC 173-340-430, before selecting a final cleanup action through the feasibility study process.

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**:

- Change the boundaries of the Site.
- 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 70A.305.040(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 70A.305.080 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 70A.305.170(6).

Contact Information

Thank you for choosing to clean up your Property under the VCP. 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](#).¹⁵ If you have any questions about this opinion, please contact me at nicholas.acklam@ecy.wa.gov

Sincerely,



Nicholas M. Acklam
Toxics Cleanup Program
Southwest Regional Office

NMA/sl

Attachments: A – Basis for the Opinion: List of Documents
B – Site Figures

cc by email: Chris Bacha, City of Tacoma, CBacha@ci.tacoma.wa.us
Ecology Site File

¹⁵ <https://www.ecy.wa.gov/vcp>

Attachment A - Basis for the Opinion: List of Documents

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Basis for the Opinion: List of Documents

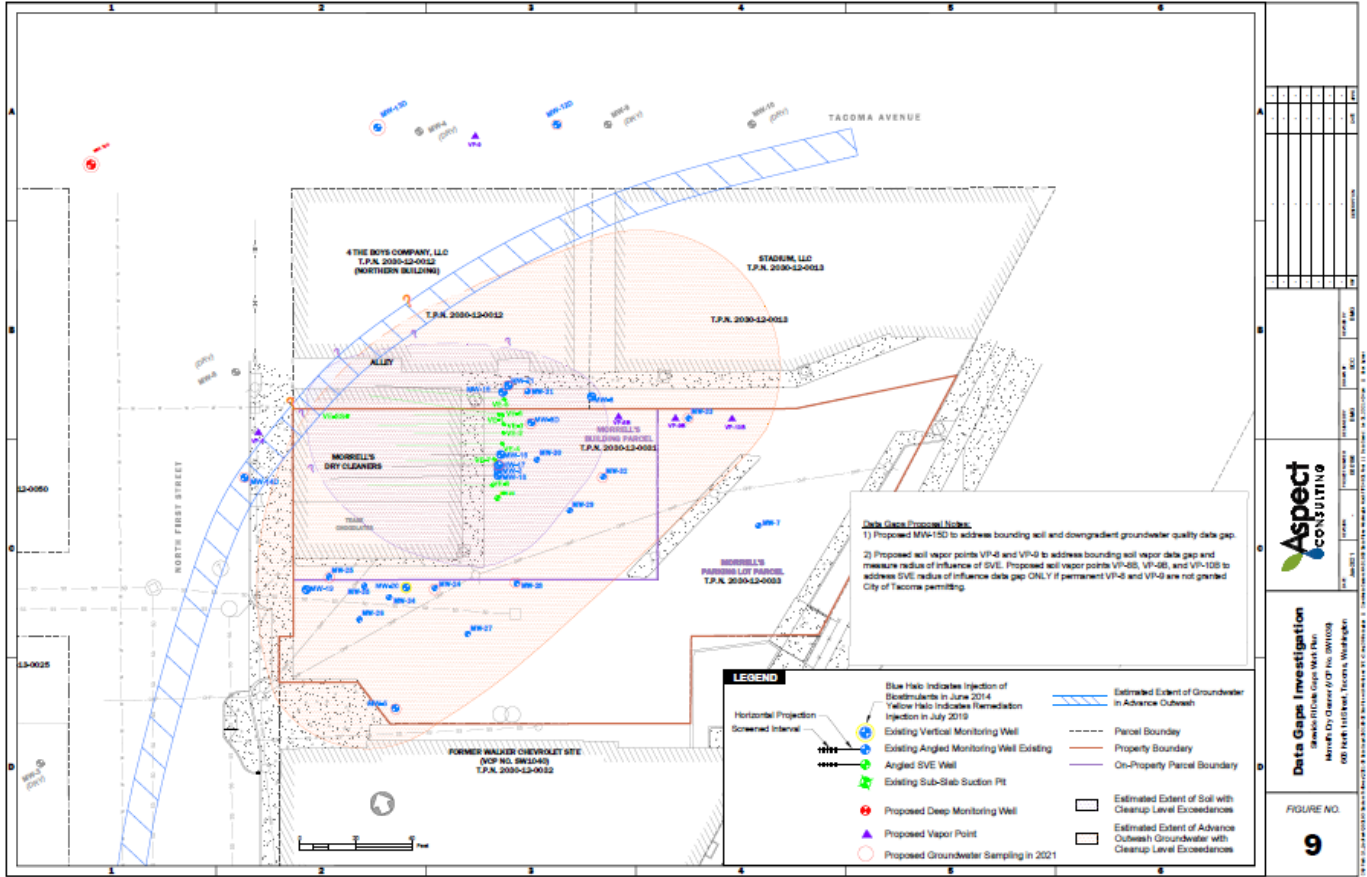
1. Aspect Consulting, LLC (Aspect), *Site wide RI/FS Work Plan, Morrells Dry Cleaners*, June 4, 2021.
2. Aspect, *Property Specific Closure Report for Parking Lot Parcel, Morrells Dry Cleaners*, August 28, 2020.
3. Aspect, *From: Dave Hefner, To: Adam Harris, Ecology, Re: Response to Information Request*, December 19, 2019, January 16, 2020.
4. Aspect, *Interim Cleanup Action Construction Completion Report, Morrells Dry Cleaners*, December 23, 2014.
5. Aspect, *Interim Cleanup Action and Design Report, Morrells Dry Cleaners*, May 16, 2014.
6. Aspect, *Memorandum From: Douglas Hillman, To: Dave Shaw: Re: Former Walker Chevrolet, and Morrells Dry Cleaners, Data Gaps Investigation*, May 1, 2012.
7. Aspect, *Focused Feasibility Study, Morrell's Dry Cleaner*, March 26, 2012.
8. Aspect, *Memorandum From Douglas Hillman, To: Dave Shaw, Re: Site Conditions Summary, Former Walker Chevrolet Property*, July 14, 2009.
9. Law Offices of Gordon, Thomas et al., *Re; Titus Chevrolet*, November 10, 2008.

Attachment B - Figures

Figure 9..... Aspect - Data Gaps Investigation

Figure 5..... Aspect – Estimated Extent of PCE Exceedances in Soil

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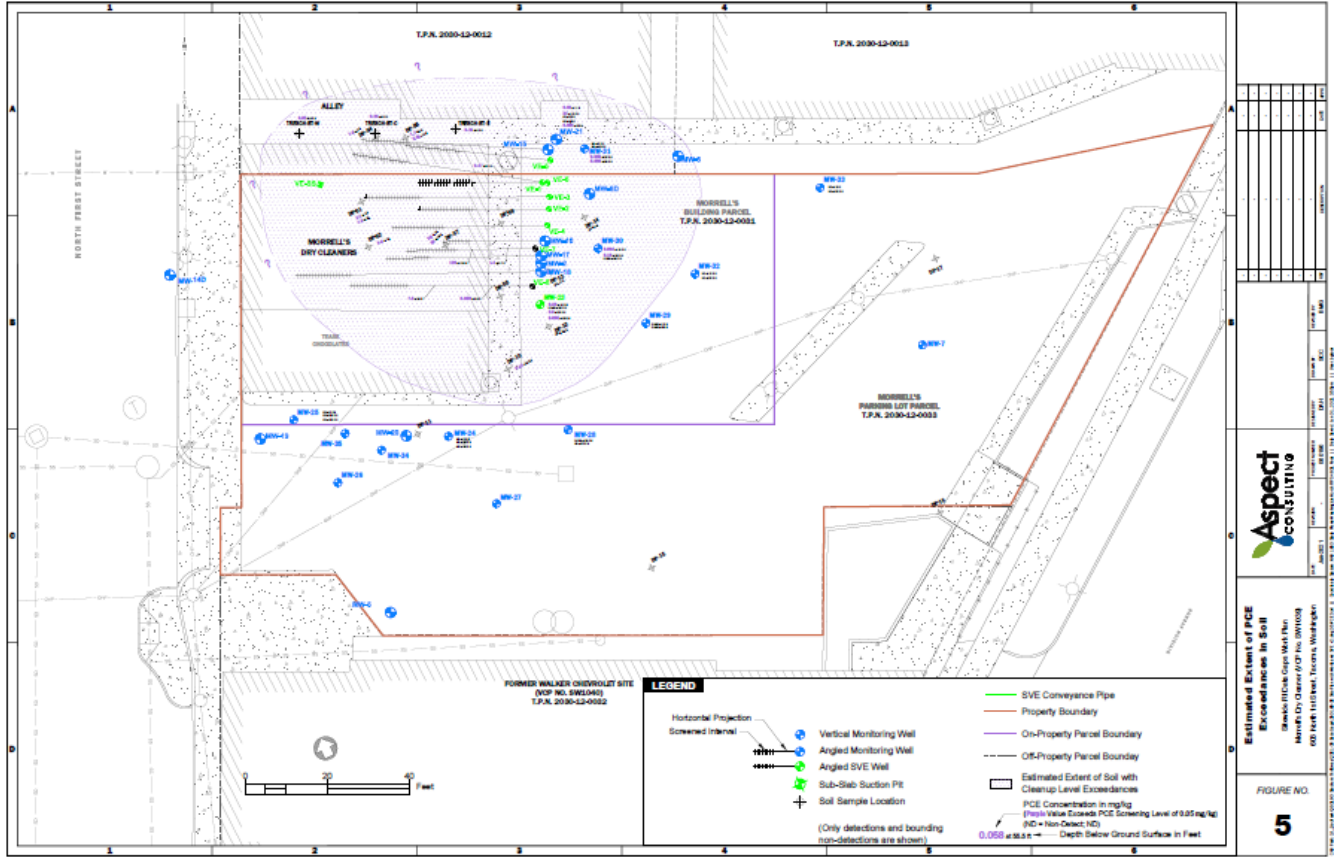


Aspect Consulting

Data Gap Investigation
Remediation Site Work Plan
MORSELL'S BUILDING PARCEL
0810403 Walker Chevrolet

DATE: 10/12/2021
SCALE: AS SHOWN
PROJECT NO: 2021-001

FIGURE NO. 9



| DATE | REVISION |
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Estimated Extent of PCE Exceedences in Soil
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 12/11/2011

FIGURE NO. **5**

