

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

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April 9, 2020

Chang Kim Four Corners Cleaners 23886 Kent-Kangley Road Maple Valley, WA 98038

Re: Opinion Pursuant to WAC 173-340-515(5) on Remedial Action for the following Hazardous Waste Site:

- Name: Four Corners Cleaners New Location
- Address: 23886 SE Kent-Kangley Road, Maple Valley, WA 98038
- Facility/Site No.: 5867
- Cleanup Site ID No.: 12513
- VCP No.: NW3234

Dear Chang Kim,

The Washington State Department of Ecology (Ecology) received your request for an opinion on the soil vapor extraction (SVE) system installation and data collection goals for the **Four Corners Cleaners** 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

Pursuant to completion of the *Four Corners Cleaners Soil Vapor Extraction (SVE) System Installation Technical Memo dated 12/20/2019*, is additional soil, soil vapor, and ground water sampling and evaluation necessary?

YES. Ecology has determined that additional soil, soil gas, and ground water sampling and evaluation is necessary to assess performance of the SVE system that has been installed and operated as an interim action at the Property.

This opinion is based on an analysis of whether the described evaluation meets the substantive requirements of MTCA, Chapter 70.105D RCW, its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"), and Ecology's guidance documents associated with petroleum releases. 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:

- Tetrachloroethylene (PCE), Trichloroethene (TCE), cis-1,2-Dichloroethene (DCE), trans-1,2-DCE and vinyl chloride into the Soil
- PCE, TCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride into the Soil Gas
- Suspected PCE and associated breakdown products into the Ground Water

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

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

Ecology's Toxics Cleanup Program has reviewed the following information contained in the following documents regarding your proposed remedial actions:

- 1. Associated Environmental Group, LLC, *Technical Memorandum Soil Vapor Extraction* (SVE) System Installation; Four Corners Cleaners New Location; 23886 Kent-Kangley Road, Maple Valley, Washington dated December 20, 2019.
- Washington Department of Ecology, *RI/FS and CAP Opinion, Four Corners Cleaners* New Location; 23886 Kent-Kangley Road, Maple Valley, Washington, VCP No. NW3234, dated November 12, 2019.
- 3. Associated Environmental Group, LLC, *Four Corners Cleaners New Location Cleanup Action Plan; Four Corners Cleaners New Location; 23886 Kent-Kangley Road, Maple Valley, Washington* dated May 29, 2019.
- 4. Associated Environmental Group, LLC, Four Corners Cleaners New Location Remedial Investigation/Feasibility Study/Report; Four Corners Cleaners New Location, 23886 Kent-Kangley Road, Maple Valley, Washington, dated March 14, 2019.

> 5. Washington Department of Ecology, *No Further Action Opinion, Four Corners Cleaners New Location; 23886 Kent-Kangley Road, Maple Valley, Washington, VCP No. NW2962,* dated February 28, 2017.

These documents are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can make an appointment by completing a Request for Public Record form (<u>https://www.ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests</u>) and emailing it to <u>PublicRecordsOfficer@ecy.wa.gov</u>, or contacting the Public Records Officer at 360-407-6040. A number of these documents are accessible in electronic form from the Site web page (<u>https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=12513</u>).

Analysis and Opinion

1. Additional soil, soil gas and ground water sampling and evaluation to determine the effectiveness of the remedial action.

Based on a review of the *Four Corners Cleaners SVE Installation Memorandum* and other Site documents listed, Ecology has determined **that additional soil, soil gas, and ground water sampling and evaluation is necessary to assess performance of the SVE system that has been installed at the Property.**

The elements of the SVE system action consists of the following:

- Installation of SVE wells and vapor monitoring points. Four SVE wells (SVE-1 through SVE-4) were installed outside the tenant space at a depth of 15 feet bgs. One SVE well (SVE-5) was installed within the tenant space. Three sub-slab monitoring points (VP-1 to VP-3) were installed.
- System performance will be evaluated by measuring the induced vacuum below the building slab, collecting inlet/outlet samples, collecting sub-slab vapor samples and monitoring indoor air quality.
- Performance monitoring is planned to predict the duration of the SVE operation and effectiveness.

Indoor air quality needs to be routinely assessed. Ecology recommends sampling indoor air as follows:

- At least one winter sampling event which would include multiple indoor locations.
- Continued indoor air monitoring at additional times after the winter sampling event.

• At several points throughout the winter, as well as conducting another measurement of pressure field extension (indoor/sub-slab pressures).

Additional sampling should commence after a period of stabilization following remediation. The data will determine if the SVE interim action is likely to result in soil, soil gas, and ground water cleanup standards being met in a reasonable timeframe.

Indoor air quality will also need to be assessed to critique post-remediation site conditions (sub-slab, ambient, and indoor air sampling and analysis activities). Ecology recommends sampling indoor air at several points throughout the winter, as well as conducting additional measurements of pressure field extension (indoor/sub-slab pressures).

Future vapor assessment considerations include: vapor intrusion pathway potential if a new building is constructed on the Property, and vapor intrusion pathway potential to commercial buildings in the vicinity of the Property. Ecology's November 12, 2019 opinion letter provided information for assessing and addressing future and adjacent soil vapor issues.

2. 12/20/2019 Tech Memo specifics –

- On page 1: The 12/20/2019 Tech Memo states that ground water did not contain "detectable VOCs." The memo must also include, or reference from a previous report lists of VOCs that were analytes.
- On page 1: The Tech Memo text states that PCE was the only contaminant of concern (COC) detected above MTCA cleanup levels (CULs) in soil samples. The memo must also include, or reference from a previous report lists of contaminants that were analytes.
- On page 5: The Tech Memo should have a table with the 10/9/19 indoor and ambient air results. The sampling locations should also be shown on a figure.
- On page 5: The Tech Memo states that air samples were analyzed for all VOCs previously detected in sub-slab vapor. However, Table 3 indicates that chlorinated ethenes (chloroform, Freon-12, and 1,1,2-TCA) were previously detected. No results are shown for these three compounds (or methylene chloride) in Table 2. If they were not analytes for air or VP1 through VP3 soil gas samples, the memo should explain why. Also noted that methylene chloride is mentioned in the text, but was not included in Table 3.
- On pages 6-7: The next indoor air sampling event should have a concurrent measurement of pressure differential. If the indoor air quality shows results below applicable cleanup levels, then it may be appropriate to just measure pressure differential going forward every 3-6 months.

- Two of the three existing vapor monitoring points (VP1 and VP2) are very close to extraction wells. Ecology would like to see an additional location added in one of those recommended sports to confirm conditions under the entire building/further from the extraction wells. More appropriate locations to consider: just west of SV-13, SV-3 or SV-1, SV-4, and SV-8.
- Figure 2: Minor point; but unclear why the "VM" points are not labeled as "VP"?
- Process &Instrumentation Diagram (Figure 8): Minor point; but unclear: why does the intake manifold shown here have three lines instead of five lines?
- Table 3: The notes to the table should identify all VOCs that were analytes for both the 2017 and 2019 sampling events. Also, the TCE concentration for VP1 is not listed correctly in the lab report, as 4.84, **not** 4.48.
- Table 4. Minor point; but in need of correction: the TCE concentration for the INPUT sample in the lab report is 4.40, **not** 4.48.

3. Characterization of site hydrogeologic conditions –

Before further work is completed, Ecology encourages the development of a work plan to ensure that sufficient ground water data is collected.

As stipulated in Ecology's November 12, 2019, opinion letter:

- Monitoring wells constructed per WAC 173-160 are needed at the Site to assess the following:
 - o Ground water elevations, flow direction(s), and gradients.
 - Locations for collection of representative ground water samples, upgradient and downgradient of Site contamination sources.
 - Concentrations of chemicals of concern (COCs) in ground water. Note that a
 minimum of four quarters of ground water samples with results below MTCA
 Method A cleanup levels are necessary to support a Site No Further Action
 opinion. The period of ground water sampling after conducting remediation
 will be extended to assess potential rebound of contaminant concentrations.
 - Potential impacts to local ground water supplies. <u>The Site is located within</u> <u>the 1-year time-of-travel wellhead protection zone of the Witte Well #2,</u> operated by the Covington Water District.

4. Remedial action assessment.

Soil Cleanup Standards:

The Site does not meet the MTCA definition of an industrial property; therefore, soil cleanup levels suitable for unrestricted land use are appropriate. For unrestricted land use, through protection of direct contact, and protection of leaching to groundwater, either MTCA Method A or Method B cleanup levels can be used. MTCA Method A soil cleanup levels, MTCA Method B sub-slab screening levels, and MTCA Method A ground water cleanup levels have been selected.

The following potential exposure/risk pathways are appropriate to consider:

- Human health protection from direct soil contact pathway exposure.
- Human health protection from soil-to-air pathway exposure.
- Terrestrial ecological protection.

Soil cleanup levels protective of terrestrial ecological receptors are not necessary because the Site meets the initial Terrestrial Ecological Evaluation (TEE) exclusion criteria (WAC 173-340-7491(1)(c)(i)). There are less than 1.5 acres of contiguous undeveloped land on or within 500 feet of the area of the Site. The TEE form submitted with the March 14, 2019 *RI/FS Report* was accepted by Ecology.

For soil cleanup levels based on the protection of ground water, the point of compliance is defined as Site wide throughout the soil profile and may extend below the water table. This is the appropriate point of compliance for the Site.

Ground Water Cleanup Standards:

Ground water below the Site is considered potable. The following potential exposure/risk pathways were appropriate to consider:

- Human health protection from drinking groundwater pathway exposure.
- Human health protection from vapor intrusion from groundwater to indoor air pathway.

For groundwater cleanup levels based on drinking water, the point of compliance is defined as 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. This is the appropriate point of compliance for the Site.

Air Cleanup Standards:

Cleanup levels for air are based on protection of human health. MTCA Method B indoor air cleanup levels are the appropriate choice (MTCA Method A values do not exist).

The standard point of compliance for air is in ambient and indoor air throughout the Site.

Cleanup Action Requirements:

The selected action must meet applicable minimum requirements for cleanup actions stipulated in WAC 173-340-360: protect human health and the environment, comply with cleanup standards, use permanent solutions, and provide for reasonable restoration time frames.

Cleanup Action Report:

Once cleanup has been completed, the project will need completion of a final Cleanup Action Report (CAR), which summarizes all work conducted at the Site as well as results, interpretations, and conclusions. Once the CAR has been reviewed and Ecology concurs that the interim action constitutes a cleanup action for the Site, a No Further Action (NFA) opinion can then be issued for the Site.

5. Other requirements.

Electronic submittal of all sampling data into Ecology's electronic *Environmental Information Management* (EIM) database is a requirement in order to receive a final Ecology opinion for this Site. The most recent data from this Site in EIM was collected in July 2012. Note that all data must be uploaded into the Ecology EIM system upon submission of each report to Ecology. This allows the Ecology Site Manager to access data to check results or perform additional analyses with those data. Gaylen Sinclai (email gsin461@ecy.wa.gov, or via telephone at 360-407-6496) is Ecology's contact and resource on entering data into EIM.

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). Ecology appreciates your initiative in conducting independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed for or conducted at the Site meet those requirements.

For more information about the VCP and the cleanup process, please visit our web site: <u>www.</u> <u>ecy.wa.gov/programs/tcp/vcp/vcpmain.htm</u>. If you have any questions regarding this opinion, please feel free to contact me at (425) 649-4422, or email me at <u>gcar461@ecy.wa.gov</u>.

Sincerely,

Alguis A. Carrentino

Glynis A. Carrosino Project Manager Toxics Cleanup Program

Enclosures (1): A – Description and Diagrams of the Site

cc: Becky Dilba, Associated Environmental Group LLC Sonia Fernandez, VCP Coordinator, Ecology

Enclosure A

Description and Diagrams of the Site

Site Description

This section provides Ecology's understanding and interpretation of Site conditions, and is the basis for the opinions expressed in the body of the letter.

Site: The Site is defined by PCE, TCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride into the soil, soil gas, and ground water. The Site is located northwest of the intersection between SE Kent-Kangley Road and Highway 169 in Maple Valley. The Property consists of King County tax parcel 510711-0010, which covers approximately 9.57 acres at 23886 Kent-Kangley Road in Maple Valley, Washington (Property). **(Figure 1)**

Area and Property Description: The Property is located in the middle of a city block, in an area of five retail buildings totaling 254,663 square feet. An "L" shaped building on the southwest portion of the Property includes the Four Corners Cleaners tenant space. The remainder of the Property not covered by buildings consists of asphalt-paved parking and driveways, and landscaped areas. The immediate vicinity of the Site is primarily commercial businesses. (**Figure 2**)

Site History and Current Use: The Property consists of a "L" shaped commercial building. Information has not been provided regarding when the building was built, nor how long the current dry cleaning facility has been operating. The Four Corners Cleaners facility continues to operate, and switched processes to a hydrocarbon dry cleaning machine in 2017.

Sources of Contamination: The potential sources of contamination at the Site are PCE and the related degradation products TCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride associated with releases of chlorinated compounds from operations of the former dry cleaning machine at the facility. Site assessments conducted from 2003 to 2014 confirmed the presence of PCE and related degradation products in the soil vapor.

Physiographic Setting: The Property is located within the Puget Lowland physiographic province, a broad, low-lying region situated between the Cascade Range to the east and the Olympic Mountains to the west. The Site is located on the Des Moines drift upland, at an elevation of approximately 565 feet above mean sea level (msl). The Property surface is relatively level, with a slight gradient toward the north.

Surface Water: The closest bodies of water to the Property is Rock Creek, which is located approximately 2,000 feet to the east of the Property. Surface water and storm water runoff on and in the vicinity of the Site disperses via sheet flow to the City of Maple Valley's storm water drainage system.

Water Supply: A public water supply system is currently provided to the Site by the Covington Water District which obtains water from the City of Tacoma Green River watershed and multiple wells in the Lake Sawyer area. The Site is located within the 1-year time-of-travel wellhead protection zone of the District Witte Well #2.

According to Ecology's well log data base, there are no private drinking water wells located within approximately 1,000 feet of the Property.

Ecological Setting: The Property is located in a developed area and is surrounded by roadways and commercial and residential properties. Land surfaces are primarily covered by buildings and concrete or asphalt pavement.

Geology: The Site and vicinity are primarily underlain by the Vashon till, a dense unconsolidated glacial deposit characterized by poorly-sorted materials including gravel, sand, silt and clay. A thin veneer of Vashon recessional outwash deposits is also present, as recorded in Site well logs to depths of at least 20 feet below the ground surface (bgs), overlaying the till. Soils encountered at the Site consisted of silt with gravel to approximately 5 feet bgs, underlain by dense, sandy gravel with fine to course-sized gravels, and cobbles to about 35 feet bgs.

Ground Water: Ground water depth at the Site ranged from approximately 25 to 33 feet bgs. Adjacent property (located east of the Site) ground water elevations indicate that the ground water flow direction is generally to the north. Ground water elevations, flow directions, and gradients have not been determined for this Site.

Release and Extent of Soil, Soil gas, and Ground water Contamination: The source of releases of contamination to the soil, soil gas and ground water at the Site are the use chlorinated solvents associated with the operations of the Four Corners Dry Cleaners facility prior to process change to hydrocarbon cleaning. (Figure 3)

Site characterization results are summarized as follows:

- In 2018, soil and ground water samples were collected from 10 boring locations (B-4 through B-13) to a maximum depth of 35 feet bgs. Soil sample B11-18 was the only soil sample with a PCE detection above MTCA Method A cleanup levels. Ground water was encountered in six of the ten borings and no contaminants were detected in the single set of samples collected.
- Also in 2018, a Soil Vapor Extraction (SVE) pilot test was conducted. Eight temporary wells (T-1 through T-8) were installed at the Site. The SVE pilot test was conducted over a single day.
- Analytical results of sub-slab vapor samples identified the presence of PCE at concentrations above the MTCA Method B sub-slab screening level of 321 ug/m3 in all of the collected vapor samples, except sample SV-13. Concentrations of PCE ranged from 850 µg/m³ in vapor sample SV-6, to 6,300 µg/m³ in vapor sample SV-11. The highest concentrations were in the vicinity of the current and former dry cleaning machine.
- SVE system startup occurred on October 9, 2019 and is currently in operation, including regular monitoring and collection of system data.

Site Diagrams









