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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Southwest Region Office
PO Box 47775 • Olympia, Washington 98504-7775 • 360-407-6300

March 5, 2024

Sandy Wagner
Sandmark Corporation
4707 Memory Ln W
University Place, WA 98466
slwag56@outlook.com

Re: Further Action on the Proposed Cleanup at a Site:

- **Site Name:** Malm's Summit Dry Cleaning, Inc.
- **Site Address:** 11012 Canyon Road East, Ste 12, Puyallup, Pierce County, WA 98373
- **Facility/Site ID:** 95126596
- **Cleanup Site ID:** 4482
- **VCP Project ID:** SW1516

Dear Sandy Wagner:

The Washington State Department of Ecology (Ecology) received your recent Cleanup Action Report and request for an opinion on the remedial activities conducted at the former Malm's Summit Dry Cleaning, Inc. 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]

Issue Presented and Opinion

This opinion is based on an analysis of whether the investigative/remedial work and groundwater data to date meets the substantive requirements of MTCA, Chapter 70A.305 RCW,

[1] https://fortress.wa.gov/ecy/publications/SummaryPages/9406.html
[2] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305

and its implementing regulations, Washington Administrative Code (WAC) Chapter 173-340 (collectively "substantive requirements of MTCA"). The analysis is provided below.

Basis for the Opinion

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

These documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. Information on obtaining those records can be found on Ecology's public records requests web page.[3] Some site documents may be available on Ecology's Cleanup Site Search web page.[4]

The Site is defined by the extent of contamination caused by the following release(s):

- Tetrachloroethene (PCE) and associated reductive dechlorination products in soil, groundwater, soil vapor, and indoor air.

The description of the Site is based solely on the information contained within the aforementioned documents. This opinion is void if any of the information contained in those documents is materially false or misleading.

Opinion

Ecology has concluded that **further remedial action** is necessary to clean up contamination at the Site. Based on prior implementation of remediation to date, this will involve collection of both confirmational post-cleanup data as well as data to support remedial investigation data gaps. This conclusion is based on the following analysis:

1. Characterization of the Site.

This Site includes a portion of Pierce County tax parcel number 5002320010 and is thought to originate from a release or releases of chlorinated solvents from the former Malm's Summit Dry

[3] https://ecology.wa.gov/Footer/Public-records-requests
[4] https://apps.ecology.wa.gov/cleanupsearch/site/4482

Cleaning, Inc. business. That dry cleaner is reported to have operated from 1989. Historical characterization of the Site is provided in Ecology's June 16, 2016, and February 14, 2019 opinions for the Site, and in the documents listed in **Enclosure**

As a result of Ecology's initial investigation process for the former Thriftco Cleaners (FSID: 73718; CSID: 14766), Ecology determined that sufficient information continues to exist to suspect that groundwater contamination detected at Malm's Site monitoring wells MW-11, MW-16D, and MW-17D[5] may have originated from a separate release. That suspected release was placed on Ecology's Contaminated Sites List as the former Thriftco Cleaners, Facility Site ID 73718, Cleanup Site ID 14766. It is also possible that with additional investigation in the area, Ecology can better assess whether this site is separate from any other Site.

2. Ecology Comments

At independent cleanup sites, interim actions can be implemented at any time consistent with WAC 173-340-430. For this independent cleanup project, Ecology provides the following informal advice and assistance on the administrative and technical requirements of MTCA.

a. General. Ecology's listing of the former Thriftco Cleaners demonstrates Ecology's concurrence that contamination detected at locations MW-11, MW-16D, and MW-17D is suspected to originate from a separate release.

a. Soil. During November and December 2020, accessible sub-slab PCE-impacted soil that was associated with the PCE dry cleaning chemical release area to unsaturated zone soil within the former Malm's Dry Cleaner was removed via excavation. The limits of this excavation area were previously defined through extensive soil boring and sampling with soil being removed to below the MTCA Method A cleanup level (CUL) to the maximum extent practicable and to minimize any continued leaching of PCE-related soil impacts to groundwater and soil vapor. Another HVOC and PCE daughter product cis-1,2-dichloroethene (cDCE) was also removed although it occurred at concentrations less than the associated CUL.

[5] Cleanup Action Plan, footnote 1, Page 4.

During excavation, the lateral and vertical limits were guided by performance sampling and analytical data using an on-site mobile laboratory.

Impacted soil could not be physically removed beneath the southern wall of the area as it supported a load-bearing wall and removal would have compromised the buildings structural integrity. The inaccessible impacted soil extended beneath the slab and into the south-adjacent tenant spaces. Two performance soil samples EX-SW-7:3 and EX-SW-7:6 were collected at depths of 3 and 6 feet below ground surface (bgs) along the south wall and exhibited PCE above the MTCA A CUL at concentrations of 2.9 milligrams per kilogram (mg/Kg) and 3.6 mg/Kg.

As a result, in-situ remediation of this soil was addressed through installation of enhanced reductive dechlorination (ERD) infiltration galleries, application of 500 gallons of a nutrient substrate to the excavation bottom wall to enhance bacterial growth, installation of six horizontal soil vapor extraction (SVE) wells, and an SVE system which operated from January 2021 through January 2022. The SVE system was designed to remove HVOC mass from the vadose zone and mitigate the potential for vapor intrusion through sub-slab depressurization. During active SVE system operation, four SVE system effluent samples were collected for HVOC analysis. The final effluent sample collected on October 14, 2021, did not exhibit HVOC at or above the laboratory method reporting limits (MRL) and the consultant concluded the technology had effectively removed sub-slab PCE vapors. No subsequent indoor air samples were collected to assess post-remedial PCE concentrations within that media.

During April 2022, four hand auger borings were advanced under the south-adjacent tenant spaces where PCE-impacted soil had remained following excavation activities. Soil samples were collected from each boring at depths of 3 and 5 feet bgs and analyzed for HVOC. With the exception of PCE in sample HA-4:5 at 0.014 mg/Kg, none of the remaining soil samples exhibited PCE above the laboratory analytical MRL of 0.01 mg/Kg or the MTCA A CUL (0.05 mg/Kg) and the consultant concluded that the prior SVE system operation was effective at removing the remaining PCE mass in the inaccessible sub-slab soil.

Ecology Conclusion*:* Based on the final post-excavation and hand auger soil confirmation samples, PCE-impacted soil appears to have been remediated to the extent practicable through the combination of excavation, ERD, and SVE technologies. However, given soil sample datasets are finite based on collection of random soil samples, soil exhibiting PCE above the respective CUL may still exist within the former excavation footprint. Such concentrations would likely be

reduced below the CUL via application of the ERD nutrient substrate to the excavation bottom wall.

b. Groundwater. Evaluation of groundwater data from the shallow water-bearing zone in the Site area has indicated that a likely upgradient source of HVOC may have historically existed at the former Thriftco property, located approximately 200 feet east of the Site. This is primarily based on April 12, 2018 groundwater data from shallow WBZ well MW-11 which lies approximately 180 feet east of the Site building and last exhibited PCE concentrations (1,200 micrograms per liter [µg/L]) an order of magnitude above PCE concentrations in monitoring wells surrounding the Site proper as well as the presence of other dechlorinated daughter products including trichloroethene (TCE; 970 µg/L), cis-1,2-dichloroethene (cDCE; 1,000 µg/L), trans-1,2-DCE (tDCE; 11 µg/L), 1,1-DCE (DCE; 2.1 µg/L), and vinyl chloride (VC; 72 µg/L).[6]

In addition to shallow WBZ groundwater, both cDCE and VC have also been detected in deeper WBZ wells MW-16D and MW-17D (both screened from 18-28 feet bgs). Based on the quarterly groundwater monitoring event conducted on September 1, 2017, MW-16D contained cDCE and VC at respective concentrations of 3.4 and 0.56 µg/L while MW-17D exhibited 3.4 µg/L (cDCE) and 1.0 µg/L (VC).[7] However, groundwater analytical results from the most recent sampling event conducted on April 11, 2018 did not indicate the presence either compound at or above the laboratory MRLs.[8] Further, well MW-1, installed to the west of and upgradient of the Malm's building by consultant AEG in 2008, was also screened in the deep WBZ from 17 to 37 feet bgs and did not exhibit HVOC detections above the laboratory MRLs during that singular sampling event to date.[9] In addition, well MW-6 was also installed in the former unsaturated zone source area during the AEG 2008 event but was screened across both shallow and deep WBZ's from 5 to 30 feet bgs. Given MW-6 existed over a period of five years from 2008 until it was decommissioned sometime between 2013 and 2015, it may have potentially served as a conduit to convey shallow WBZ contamination to the deeper WBZ. Well MW-6 was replaced by

[6] EPI, Inc., Quarterly Groundwater Monitoring Report – April 2018, Former Malm's Dry Cleaners, Table 3, May 22, 2018.
[7] EPI, Inc., Quarterly Groundwater Monitoring Report – September 2017, Former Malm's Dry Cleaners, Table 3, October 19, 2017.
[8] EPI, Inc., Quarterly Groundwater Monitoring Report – April 2018, Former Malm's Dry Cleaners, Table 3; May 22, 2018.
[9] AEG, LLC, Supplemental Remedial Investigation – Malm's Dry Cleaners, Table 5; June 5, 2008

shallow WBZ well MW-9 and which last exhibited cDCE at a concentration of 2.8 µg/L, below the MTCA Method B CUL[10].

As also described in the current 2023 TRC Cleanup Action Report, TRC installed shallow WBZ wells MW-19, MW-20, and MW-21 in October 2021 to monitor the progress of the ERD treatment discussed under the Soil section above and provide additional monitoring of impacted groundwater near the Malm's former PCE soil source area. The wells were screened in the shallow WBZ from 7 to 12 feet bgs and have been sampled along with well MW-9 and SVE well SVE-2 during monitoring events spanning November 8, 2021; May 31, 2022; August 30, 2022; November 14, 2022; and March 8, 2023. Over these sampling events, HVOCs were detected in wells MW-9 (cDCE) and MW-19 and SVE-2 (PCE) at levels below the MTCA A (PCE) or MTCA B (cDCE) CULs.

In summary, the aforementioned results from the shallow WBZ in the former Malms HVOC source area along with prior groundwater monitoring results from consultant EPI's May 2018 Quarterly Groundwater Monitoring Report for the remaining shallow WBZ wells MW-10, MW-14, MW-15, and MW-18 indicate that past HVOC impacts to source area groundwater and groundwater downgradient (east) and adjacent to the Malms building appear to have been remediated. Groundwater data from the four aforementioned wells indicated that no HVOCs were detected at or above the laboratory MRL's over the last groundwater monitoring events conducted on August 31/September 1, 2017; January 9, 2018; and April 11, 2018.[11]

However, consultant TRC's 2023 CAR did not report either groundwater analytical data nor groundwater elevations from these or the other southeasterly shallow WBZ well MW-12. Most importantly, well MW-12 has exhibited anomalous groundwater elevations in the past and served as the basis for depiction of a westerly groundwater flow direction that appeared to exhibit a groundwater divide relative to the easterly groundwater flow direction from the Malm's Site.[12] Conversely, complete evaluations of groundwater elevations from all shallow WBZ monitoring wells within the Site area (including MW-11 and MW-12) have mostly depicted

[10] TRC, Cleanup Action Report - Malm's Dry Cleaners, Inc., Table 6, 11/29/2023.
[11] EPI, Inc., Quarterly Groundwater Monitoring Report – April 2018, Former Malm's Dry Cleaners, Table 3; May 22, 2018.
[12] EPI, Inc., Quarterly Groundwater Monitoring Report – January 2018, Former Malm's Dry Cleaners, Table 3; March 2, 2018.

a westerly/southwesterly gradient across the Malm's Site and a southerly gradient east of Malm's.[13],[14] As a result, and as previously recommended on page 5 (3rd bullet) in Ecology's 2019 Opinion,[15] additional delineation of groundwater between MW-10, MW18, and MW-11 and MW-12 should occur to further assess HVOC plume dynamics and establish clear division between the Sites and better understanding of the groundwater hydraulic regime. While the Thriftco Cleaners Site may have contributed to both shallow and deeper WBZ HVOC impacts, it is currently unclear what the exact interactions and migration pathways were/are. As such, these data gaps should be fulfilled to best evaluate the potential source(s).

To date, groundwater flow direction in the deeper WBZ has not been definitively determined due to inconsistencies between water levels in the four deeper wells. Only two of the deeper wells (MW-1 and MW-16D) have exhibited groundwater elevations that suggest a westerly flow direction that is opposite to the easterly flow direction observed in the shallow WBZ. Considering water levels in MW-16D are 6 to 12 feet higher than MW-1, the absence of groundwater in well MW-13D, and the anomalously elevated water levels in MW-17D indicating a groundwater elevation that is similar to that of the shallow WBZ (despite this well being sealed off from the upper WBZ and screened between 18 and 28 feet bgs, well below the depth of the shallow WBZ); culminate to suggest that the aquitard at this location is either leaky or perhaps partially missing and therefore should not be considered as reliable for estimating the flow direction of the deeper WBZ across the site.[16]

Ecology Conclusion: Speculation regarding the existence of a downward hydraulic gradient from Thriftco as the sole mechanism for contamination of the deeper WBZ in the area is also a likely hypothesis for a similar occurrence from the former Malm's PCE soil source area. Based on this conclusion and the former presence of well MW-6 acting as a potential conduit between the shallow and deeper WBZ's over a 5 to 7-year period, Ecology recommends that additional delineation of the deeper WBZ be conducted within and both upgradient and downgradient of

[13] EPI, Inc., Quarterly Groundwater Monitoring Report – September 2017, Former Malm's Dry Cleaners, Figure 2; October 19, 2017.
[14] EPI, Inc., Quarterly Groundwater Monitoring Report – April 2018, Former Malm's Dry Cleaners, Figure 2; May 22, 2018.
[15] Ecology, Further Action Opinion – Malm's Summit Dry Cleaning, Inc., February 14, 2019
[16] EPI Inc.; Remedial Investigation/Focused Feasibility Study Report Attachment F: March 2013 Supplemental Remedial Investigation, Vernon Environmental Inc.; page 20; 4th bullet; January 22, 2016.

the former Malm's PCE source area. Such data would provide both post-remedial data as well as provide deep zone delineation data that has not been collected to date but should have been as part of the initial investigative activities.

This conclusion incorporates consideration of past nondetectable soil sample results from easterly soil borings D5 through D8 and from wells MW-10, MW-12, MW-14, MW-15, and MW-18. Although Ecology would not suspect that vadose zone HVOC sources would have existed at those locations.

In addition, groundwater elevations at MW-12 have been variable and may be stratigraphically influenced which appear to skew the shallow zone gradient as if a groundwater divide exists. To that end, Ecology suggests collecting deep groundwater zone samples at locations near or in the vicinity of MW-10, MW-14, MW-18, MW-9, and approximately 40' NW of MW-9 to confirm that there is no contaminant concentration contribution to the deep WBZ from Malm's.

***c*. Stratigraphic Cross Section.** Figure 3 from the January 2013 Vernon SRI adequately depicts a geologic cross-section along an east-west stratigraphic transect from wells MW-7/MW-13D to MW-11. Figures 4/5/6/7 from the Vernon SRI and drawn by SCS Engineers over Nov 2011, Dec 2011, Feb 2021, and Feb 2013 show a consistent NE/E/SE shallow WBZ gradient from Malms towards MW-11 and Thriftco. Although, the groundwater elevation in MW-12 appears to be somewhat anomalous on an annual basis and may be artificially or stratigraphically influenced.

Ecology Conclusion*:* Ecology recommends constructing a similar geologic cross-section along a N-S stratigraphic transect from MW-15/MW-17D to MW-12/MW16D to best present existing data and develop further geological and hydrogeological conclusions.

d. Indoor Air. As mentioned above under the discussion on soil, the SVE system operated for a year and was discontinued in January 2022. During the operative phase, four SVE system effluent samples were collected for HVOC analysis with the final effluent sample being collected on October 14, 2021. The final effluent sample results did not exhibit HVOC at or above the laboratory method reporting limits (MRL) and the consultant concluded the SVE technology had effectively removed sub-slab PCE vapors. However, no subsequent indoor air samples were collected to assess post-remedial PCE concentrations within that medium given active dry-cleaning operations are ongoing and consultant claims that historical dry cleaning solvent residues may be emanating from sheetrock and other porous media.

Ecology Conclusion: Ecology does not concur that sub-slab vapor is the sole vapor point of compliance due to active dry-cleaning operations and potential historical dry cleaning solvent impact to building materials. Points of compliance as specified under WAC 173-340-750(6) specifies that CULs should be attained in both ambient (outdoor) air adjacent to and indoor air within a building.

To assess post-remedial effectiveness and provide closure to the inhalation exposure pathway, Ecology recommends sufficient Tier 2 sampling of both sub-slab vapor and indoor air within both the former Malm's and Hollywood Video tenant spaces. Within Malm's, Ecology recommends collection sample collection within the closet with the floor drain.

e. Terrestrial Ecological Evaluation. Within consultant EPI's January 22, 2016, document entitled *Remedial Investigation/Focused Feasibility Study Report (RI/FFSR)*, Section 1.3.3 Natural Resources and Ecological Receptors presents the following discussion:

"The Site is fully paved or covered by buildings and is located within an unincorporated area of Puyallup, Pierce County. The property qualifies for a Terrestrial Ecological Evaluation (TEE) exclusion based upon WAC 173-340-7491(1)(b), which states: "All soil contamination with hazardous substances is, or will be, covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed to the soil contamination" Therefore, terrestrial ecological exposures are not considered for the Site."

Appendix L of the RI/FFSR contains the corresponding and completed TEE Form.

Ecology Conclusion*:* While the proposed exclusion from further TEE is viable, Ecology recommends a different approach. This is because the proposed exclusion requires the use of institutional and engineered controls memorialized by an environmental covenant to maintain the barriers at the Site. Ecology recommends evaluating the Site by simplified TEE, WAC 173-340-7492(2)(a)(ii) and Table 749-1. With your next deliverable, Ecology recommends submitting the simplified TEE evaluation, a figure showing a radius of 500 feet around the Site and any calculated undeveloped acreages within that circle, and a revised TEE form.

f. EIM. Please ensure that all environmental data collected to date have been uploaded into Ecology's EIM database. After data acceptance, the VCP site manager will have to review and approve all data accepted into EIM before any no further action letter can be issued.

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

For more information about the VCP and the cleanup process, please visit our Voluntary Cleanup Program web site.[17] If you have any questions about this opinion, please contact me at (360) 489-5347 or joe.hunt@ecy.wa.gov.

Sincerely,

Joseph B. Hunt, LHG
Toxics Cleanup Program
Southwest Regional Office

JH:at

Enclosure: A – Documents List

cc: Nate Hinsperger, TRC Environmental Corp., NHinsperger@trccompanies.com
Stephan Tan, Cascadia Law Group, stan@cascadialaw.com
Jerome Lambiotte, Ecology, jerome.lambiotte@ecy.wa.gov
Ecology Site File

[17] https://www.ecy.wa.gov/vcp

Enclosure A

Documents List

1. Chevron Station #20-0587 (10918 Canyon Road East) SWRO-TCP files: through July 25, 2007.
2. The Riley Group, Inc. (Riley), Phase I Environmental Site Assessment, Summit Country Retail Center, November 17, 2006.
3. Riley, Preliminary Phase II Investigation Report, Summit Country Retail Center, December 20, 2006.
4. Associated Environmental Group, LLC, Proposed Scope of Work—Supplemental Remedial Investigation, Malms Dry Cleaners/Summit Country Retail Center, February 28, 2008.
5. Associated Environmental Group, LLC, *Supplemental Remedial Investigation*, June 5, 2008.
6. Associated Environmental Group, LLC, *Groundwater Monitoring/Sampling Event*, July 2008.
7. Associated Environmental Group, LLC, *Groundwater Monitoring/Sampling Event*, November 2008.
8. Vernon Environmental, Inc., Proposal for Groundwater Well Installations and Remedial Investigation, Malm's Dry Cleaners, Puyallup, WA, May 28, 2010.
9. Vernon Environmental, Inc., Proposal for Soil Vapor Probe Installations and Vapor Intrusion Modeling, Add-On to the Supplemental Remedial Investigation, Malm's Dry Cleaners, Puyallup, WA, March 22, 2011.
10. Vernon Environmental, Inc., Work Plan for Supplemental Remedial Investigation, Malm's Dry Cleaners Site, Puyallup, WA, August 24, 2011.
11. Vernon Environmental, Inc., Supplemental Proposal for Drilling Scope Increases: Second Add-On to the Remedial Investigation, Malm's Dry Cleaners, Puyallup, WA, October 4, 2011.
12. Vernon Environmental, Inc., Revised Work Plan for Supplemental Remedial Investigation, Malm's Dry Cleaners Site, Puyallup, WA, October 26, 2011.
13. Ecology, Re: Opinion on Proposed Cleanup of the following Site: Malm's Summit Dry Cleaning, Inc., November 14, 2011.
14. Vernon Environmental, Inc., Supplemental Remedial Investigation, Malm's Summit Dry Cleaning Site, Summit Country Center, Puyallup, WA, March 4, 2013.
15. Ecology, Re: Further Action at the following Site: Malm's Summit Dry Cleaning, Inc., August 19, 2013.
16. Environmental Partners Inc., Remedial Investigation/Focused Feasibility Study Report, Former Malm's Summit Dry Cleaning Site, January 22, 2016.
17. Ecology, Re: Opinion on Proposed Cleanup of the following Site: Malm's Summit Dry Cleaning, Inc., June 16, 2016.
18. Environmental Partners Inc., Draft Cleanup Action Plan, Former Malm's Dry Cleaning Site, August 31, 2017.
19. Environmental Partners, Inc., Quarterly Groundwater Monitoring Report – January 2018, March 2, 2018.
20. Environmental Partners, Inc., Quarterly Groundwater Monitoring Report – April 2018, May 22, 2018.
21. Environmental Partners, Inc., *Engineering Design Report*, August 7, 2018.
22. Environmental Partners, Inc., Response to Ecology Opinion Letter, September 14, 2018, November 16, 2018.
23. Ecology, Re: Further Action at the following Site: Malm's Summit Dry Cleaning, Inc., February 14, 2019.
24. Environmental Partners, Inc., Cleanup Action Report, November 29, 2023.