



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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September 8, 2014

Mr. Nicholas Echelbarger
Mill Creek Crossing LLC
22833 Bothell-Everett Highway
Bothell, WA 98021

Re: Opinion Pursuant to WAC 173-340-515(5) on Remedial Investigation/Feasibility Study and Cleanup Action Plan for the Following Hazardous Waste Site:

- **Name:** Mill Creek Crossing – Prime Cleaners
- **Address:** 18001 Bothell-Everett Highway, Suite 125, Bothell
- **Facility/Site No.:** 19816
- **VCP No.:** NW2571
- **Cleanup Site No.:** 11775

Dear Mr. Echelbarger:

Thank you for submitting documents regarding your Supplemental Remedial Investigation and proposed Pilot Study Work Plan for the Mill Creek Crossing – Prime Cleaners (Site) for review by the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding a review of submitted documents/reports pursuant to requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release at the Site:

- Tetrachloroethylene (PCE), trichloroethylene (TCE), and chloroform into soil, indoor air and groundwater.

Ecology is providing this advisory opinion under the specific authority of RCW 70.105D.030(1)(i) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. The state does not have the authority to settle with any person potentially liable under MTCA except in

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accordance with RCW 70.105D.040(4). The opinion is advisory only and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your Remedial Investigation and proposed pilot study work plan:

1. *Remedial Investigation/Feasibility Study and Pilot Study Prime Cleaners*, dated June 24, 2014, prepared by Zipper Geo Associates, LLC.
2. *Cleanup Action Plan Prime Cleaners*, dated June 24, 2014, prepared by Zipper Geo Associates, LLC.

The reports listed above will be kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. Appointments can be made by calling the NWRO resource contact at (425) 649-7235 or sending an email to nwro_public_request@ecy.wa.gov.

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

- Tetrachloroethylene (PCE), trichloroethylene (TCE), and chloroform into soil, indoor air and groundwater.

Based on a review of supporting documentation listed above, pursuant to **requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release at the Site, Ecology has determined:**

- Ecology has received and reviewed your Remedial Investigation/Feasibility Study (RI/FS) and Cleanup Action Plan (CAP) for Prime Cleaners.
- The Site has been sufficiently characterized to select an appropriate cleanup standard. Ecology concurs with your selection of MTCA Method A cleanup levels for Site chemicals of concern in soil and ground water, and MTCA Method B for air.
- During the soil gas investigation, chloroform was detected above its respective screening level of $1.1 \mu\text{g}/\text{m}^3$. The RI report states: "The source of the chloroform is unknown, but could be related to a leaky waterline (potable water conveyed to the Property is chlorinated) or bleach from a leaky wastewater pipe." Ecology notes that in addition to this statement, chloroform was used in the past as a dry cleaning spot remover (<http://www.epa.gov/ttn/atw/hlthef/chlorofo.html>), and therefore will be included as a potential Site chemical of concern.

- The Site has been sufficiently characterized to select a cleanup action for the **Property**.
- Soil impacts above applicable cleanup levels are limited to the immediate vicinity of the southwest part of the building. Ground water impacts above applicable cleanup levels appear to be limited to a small area immediately south and southwest of the source area, and extend beneath the south adjoining mini-warehouse facility and the SR 527 right-of-way. Several requests were made to Advance Management, Inc., the owner of the mini-warehouse property south of the Property, to authorize access for collecting soil and groundwater samples on that property. The owner did not respond to any requests. Therefore the extent of off-Property ground water impacts to the south-southwest can only be assumed.
- The FS analyzes three alternative remedial actions to address the Site. Alternative A: Monitored Natural Attenuation (MNA), Alternative B: Enhanced Reduction Dechlorination (ERD) / Soil Vapor Extraction (SVE), and Alternative C: Dual Phase Extraction (DPE).
- Alternative A, MNA, was eliminated during the screening process since biodegradation could not be demonstrated to be occurring at the Site. The ERD component of Alternative B was eliminated after data from a pilot test conducted at the Site in April 2014 showed that this system was not practical. However, the pilot test showed that Alternative C - DPE has a high potential for remediating the ground water plume.
- Since ground water impacts off-Property to the south-southwest cannot be fully assessed, Ecology's approves the preferred Alternative C - Dual Phase Extraction, as an Interim Action which may lead to a "Property Specific" No Further Action (NFA) determination with an Environmental Covenant for the inaccessible soil contamination beneath the southerly strip mall building.

This opinion does not represent a determination by Ecology that a proposed remedial action will be sufficient to characterize and address the specified contamination at the Site or that no further remedial action will be required at the Site upon completion of the proposed remedial action. To obtain either of these opinions, you must submit appropriate documentation to Ecology and request such an opinion under the VCP. **This letter also does not provide an opinion regarding the sufficiency of any other remedial action proposed for or conducted at the Site.**

Please note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

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The state, Ecology, and its officers and employees make no guarantees or assurances by providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

Again, 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.

If you have any questions regarding this opinion, please contact me at (425) 649-4446 or by email at damy461@ecy.wa.gov.

Sincerely,

Dale Myers
Site Manager
Toxics Cleanup Program

Enclosure: Property and Site Description

cc: Mr. Jon Einarsen, Zipper Geo Associates, LLC
Sonia Fernandez, VCP Coordinator, Ecology

Enclosure A

Property and 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.

The Property is commercially developed within the Mill Creek Crossing retail center (MCC), located at 18001 Bothell-Everett Highway in Bothell, Snohomish County, WA. The MCC comprises approximately 3.15 acres and includes two strip mall buildings with a combined 18 tenants and standalone buildings occupied by an Ezell's Chicken restaurant, a Rite-Aid, a coffee shop, and a Plaid Pantry convenience store/gas station.

Tenants of the southerly of the two strip mall buildings (where contamination is located) consist of a Money Tree, Prime Cleaners, the Osaka Grill, Sundia Tan, a florist, Pro Nails, Computer Concepts, a State Farm insurance agent, and a Divita Dialysis Center. The source of the contamination at the Property appears to be dry cleaning activities in part of the tenant space currently occupied by Money Tree but formerly occupied by a former dry cleaner from 1984 until about 2000.

The MCC is bounded to the south by a mini-warehouse storage facility, and to the west by the Bothell-Everett Highway (SR 527) and its associated right-of-way. The MCC is bounded to the east by a commercial business, beyond which lies a residential housing development.

The Property consists of Snohomish County Tax Parcel #27051800106300 and #27051800100300. Former dry cleaning activities were located in Tax Parcel #27051800106300. The Property zoning is General Commercial.

Site contaminants of concern are tetrachloroethylene (PCE), trichloroethylene (TCE), and chloroform into soil, indoor air and ground water.

The Site is located near the southwest corner of Snohomish County Tax Parcel #27051800106300 and extends beneath the south adjoining mini-warehouse facility and the SR 527 right-of-way approximately 500 feet south of the intersection with 180th Street Southeast. A Site plan indicating the approximate location of the "Site" is included as Figure 3.

The use of PCE associated with historical operations and practices at the current and former dry cleaner businesses are believed to be the primary source for the documented Site contamination. Release mechanisms for PCE likely involved spills during normal operations and possibly other actions associated with facility operations. Contaminated soils then became a secondary source of contamination, with downward migration of contaminants to ground water.

Contamination of ground water via soil leaching appears to have occurred; the soil to ground water pathway at the Site is complete. Further investigation concerning vapor intrusion and the soil/ground water pathway to indoor air is required.

Remedial Investigation Findings

- Soils to depths of over 40 feet at the Site consist of dense to very dense sand, sandy gravel, gravelly sand and occasional cobbles, all with varying amounts of silt. Soil is interpreted to consist of upper parts of the Vashon Advance outwash.
- The water table lies at a depth of approximately 15 to 26 feet beneath the ground surface, and groundwater flows in a southerly direction. Ground water is unconfined and appears to be in an aerobic condition.
- Detectable concentrations of PCE (1.3 µg/kg to 560 µg/kg) and TCE (9.2 µg/kg to 38 µg/kg) in soil are present at the Site. Method A for PCE is 50µg/kg and for TCE is 30µg/kg.
- The concentrations of PCE in groundwater collected from MW-3 (5.6 µg/L to 15 µg/L), MW-4 (44 µg/L to 170 µg/L), and MW-8 (13 µg/L to 36 µg/L) have exceeded the MTCA Method A cleanup level (5 ug/L) in all sampling events. The concentration of PCE in the down gradient well MW-7 (8.0 µg/L) has exceeded the cleanup level in one of three sampling events. PCE was not detected, or was detected in concentrations below MTCA Method A cleanup levels in all of the other wells. TCE and cis-1,2-dichloroethene (DCE) were detected in MW-1 during the 2010 sampling event, but in concentrations below MTCA cleanup levels. TCE, DCE, and vinyl chloride (VC) have not been detected in the other wells.
- During the most recent sampling event in March 2014, the PCE plume extended in a southerly to south-southwesterly direction off-Property to MW-8 and MW-7 for a distance of about 200 feet.
- Based on ground water samples collected over a period of almost five years, the plume appears to be stable.
- The direct contact pathway for soil is incomplete as the majority of soil contamination is located beneath the existing south strip mall building.
- The soil to ground water pathway is complete.
- The soil and ground water to indoor air pathway for PCE and TCE will require further investigation and cooperation of the Prime Cleaner tenants during investigations.

Feasibility Study and Recommended Remedial Alternatives

Alternative A – Monitored Natural Attenuation (MNA)

Alternative B – Enhanced Reduction Dechlorination/Soil Vapor Extraction, (ERD/SVE)

Alternative C – Dual Phase Extraction (DPE)

Alternative A is not likely to meet the Remedial Action Objectives (RAOs) and the ERD component of Alternative B is not technically practical. Alternative C is the recommended alternative. This approach optimizes achieving the RAOs and compliance with MTCA at the best overall cost. Key elements of the recommended alternative, including estimated time to complete each element, are described below.

- Install three additional DPE extraction wells. Given the 40-foot radius of influence recommended by Global Remedial Systems LLC (GRS), this should be sufficient to reach PCE and TCE-contaminated soil and ground water on that part of the Site that lies within the Mill Creek Crossing retail center. This task can be completed within about one month of the notice to proceed. The approximate locations of the recommended DPE wells are indicated on Figure 15.
- Install the DPE system and associated underground piping and equipment compound. Including system startup this task can be completed within about three months of notice to proceed.

Using the estimated mass of PCE in soil and ground water and the estimated removal rates based on the results of the Pilot Study it is estimated that the DPE system would need to operate for about one year to achieve the RAOs and MTCA compliance for ground water throughout the Property.

