



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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June 24, 2020

Anastasia Duarte
Tesoro Refining and Marketing Company
3450 South 344th Way Suite 135
Federal Way, WA 98001

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

- **Site Name:** Tesoro 62172
- **Site Address:** 401 E. College Way, Mount Vernon, WA
- **Facility/Site ID No.:** 69264124
- **Cleanup Site ID:** 6524
- **VCP Project No.:** NW2419

Dear Anastasia Duarte:

The Washington State Department of Ecology (Ecology) is providing an opinion on the cleanup of the **Tesoro 62172** facility (Site) in this letter. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW. This opinion applies only to the Site described below.

Description of the Site

The Site is defined by the nature and extent of contamination associated with the following releases:

- Total petroleum hydrocarbons in the gasoline range (TPH-G), benzene, toluene, ethylbenzene and xylenes (BTEX) into the soil and ground water

Enclosure A includes a detailed description and diagrams 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 associated with this Site is affected by other sites.

Basis for the Opinion

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

1. AECOM, 2020. *First Quarter 2020 Groundwater Monitoring Report, Speedway Store No. 2172 (formerly Tesoro Facility No. 62172) 401 E. College Way, Mount Vernon, Washington.* March 30.
2. SoundEarth Strategies, 2019. *Activated Carbon Injection Pilot Test Report, Tesoro Refining and Marketing Company Facility No. 62172, 401 East College Way, Mount Vernon, Washington.* January 21.
3. SoundEarth Strategies, 2018. *Work Plan Tesoro Refining and Marketing Company Facility No. 62172 Activated Carbon Injection Pilot Test, Second Quarter 2018.* April 5.
4. SoundEarth Strategies, 2017. *Fourth Quarter 2017 Groundwater Monitoring and Well Installation Report, Tesoro Refining and Marketing Company Facility No. 62172, 401 East College Way, Mount Vernon, Washington.* January 12.
5. SoundEarth Strategies, 2017. *Third Quarter 2017 Groundwater Monitoring and Well Installation Report, Tesoro Refining and Marketing Company Facility No. 62172, 401 East College Way, Mount Vernon, Washington.* December 13.
6. SoundEarth Strategies, 2016. *Fourth Quarter 2016 Groundwater Monitoring, Well Installation and Well Decommissioning Report, Tesoro Refining and Marketing Company Facility No. 62172, 401 East College Way, Mount Vernon, Washington.* December 30.
7. SoundEarth Strategies, Inc. 2014. *Summary of Supplemental Investigation, Tesoro Refining and Marketing Company Facility No. 62172, 401 East College Way, Mount Vernon, Washington.* October 17.
8. SoundEarth Strategies, 2013. *Groundwater Monitoring Report Second Quarter 2013, Tesoro Refining and Marketing Company Facility No. 62172, 401 East College Way, Mount Vernon, Washington.* August 8.
9. SoundEarth Strategies, 2013. *Groundwater Monitoring Report First Quarter 2013, Tesoro Refining and Marketing Company Facility No. 62172, 401 East College Way, Mount Vernon, Washington.* August 8.

10. SoundEarth Strategies, Inc. 2011. *Summary of Subsurface Investigation, Tesoro Refining and Marketing Company Facility No. 62172, 401 East College Way, Mount Vernon, Washington.* June 13.
11. SoundEarth Strategies, Inc. 2006. *Groundwater Monitoring and Hydrogen Peroxide Treatment, Status Report for Tesoro Mount Vernon Facility #62172.* September 1.
12. Sound Environmental Strategies, 2003. *Underground Storage Tank Decommissioning/Remediation Project, Tesoro Station No. 62172, 401 East College Way, Mount Vernon, Washington.* January 10.

Those 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 (<https://www.ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests>) and emailing it to PublicRecordsOfficer@ecy.wa.gov, or contacting the Public Records Officer at (360) 407-6040. A number of these documents are accessible in electronic format from the Site web page: <https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=6524>

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

Opinion

Based on a review of the documents listed above, Ecology has determined:

- Ecology recognizes the efforts put toward cleanup of this Site including interim remedial actions involving in-situ chemical oxidation and colloidal activated carbon injections. The comments below are meant to aid in bringing the Site to closure.
- The Property was the location of a gasoline station from at least the 1960's to 2001. Historical aerial photographs suggest that an earlier gasoline station existed prior to Gull Industries (Gull) gas station #252 which was established in the late 1970s. Please provide any available historical information related to this possibility, including due diligence reports so that all potential contaminant sources on the Site have been identified and confirmed.
- An assessment of the potential for vapor intrusion into buildings on and adjacent to the Property needs to be conducted due to the presence of petroleum-contaminated soil at concentrations above Method A cleanup levels left in place along the perimeter of the Site.

- Please conduct a terrestrial ecological evaluation (TEE) for this Site. Information on conducting a TEE can be found at the following website:
<https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Terrestrial-ecological-evaluation>
- Ground water flow directions on the Site have been determined to vary between northwest, west and southwest which is attributable to the Site's location near a localized ground water flow divide within a prominent meander bend of the Skagit River. It would be helpful to prepare a Rose diagram of historical ground water flow directions and magnitudes to determine if there is a prominent trend that can enrich the Site conceptual model.
- Table 2 should be comprehensive and include all historical ground water sampling data including previous monitoring wells such as MW03 that have been decommissioned.
- Ecology concurs with the planned discontinuation of ground water sample collection in monitoring wells MW06, MW07, MW08 and MW10 beginning in the second quarter of 2020. Concentrations of TPH-G and BTEX have been non-detectable or below Method A cleanup levels in multiple sampling rounds conducted since the wells were installed in 2014 through 2017.
- Confirmation soil borings should be planned to determine if contaminated soil remains on the Site. A work plan should be developed to address and remediate any remaining soil contamination if determined to be present on the Site. Ecology is prepared to review the draft work plan if requested.
- In addition to the Site meeting the relevant MTCA cleanup levels in soil, a minimum of four consecutive quarters of ground water sampling data with concentrations below MTCA Method A cleanup levels are needed for consideration of a No Further Action determination for this Site. Ground water sampling should continue for sufficient time to confirm that no rebound effects are occurring following the colloidal activated carbon injections. More than four consecutive quarters may be needed to assess potential rebound effects.

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 at (425) 649-7064 or heather.vick@ecy.wa.gov.

Sincerely,



Heather Vick, LHg
Toxics Cleanup Program, NWRO

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

cc: Shira Degrood, AECOM

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 as total petroleum hydrocarbons in the gasoline range (TPH-G), benzene, toluene, ethylbenzene and xylenes (BTEX) in soil and ground water at 401 East College Way in Mount Vernon, Washington (Property) (**Figure 1**). The Site was the former location of Gull Industries (Gull) retail gasoline service station #252 from 1978 to 2001. The Property corresponds to Skagit County parcel number P53850 which is 0.217 acre in size.

Area and Property Description: The Property is located at the intersection of East College Way and Riverside Drive. The Property is bordered to the north by commercial properties. The Property is bordered to the east by Mount Vernon Retail, a retail strip center. The Property is bordered to the south by College Way and Mount Vernon Plaza, a shopping center. The Property is bordered to the west by Riverside Drive and a Starbucks coffee shop.

Property History and Current Use: A historical chronology of the Site and the Property is provided in the table below.

Date	Historical Information
1937	Aerial photograph shows the Property land use as rural residential
1969	Aerial photograph shows a gas station on the Property
1978	Gull purchases Property
1998 & 2001	Aerial photographs show a different gas station from 1969 on Property
2001	Gull sells Property to Tesoro West Coast Company (Tesoro)
2002	Six USTs, associated piping and dispensing equipment and petroleum-contaminated soil removed and disposed of off-Property
2004 to 2015	Aerial photographs show the Property as vacant
2005	Injections of sodium persulfate solution targeting ground water
2008	Tesoro sells Property to City of Mount Vernon
2011	City of Mount Vernon sells Property to NWCC Investments IX
2012	Injections of sodium persulfate solution and hydrogen peroxide targeting ground water
2017	Aerial photograph shows current building foot print
2019	Aerial photograph shows current building completed

The UST removal report dated January 10, 2003 indicated that anecdotal information gathered during the tank removal suggested the presence of two earlier gas stations on the Property: a Hubble service station with USTs in the southwest corner of the Property and a Standard Oil service station with USTs in the central portion of the Property.

Six gasoline underground storage tanks (USTs) located at the former Gull gas station #252 included four 12,000-gallon gasoline tanks; also a 500-gallon UST and a 300-gallon UST with

unknown contents. These six USTs associated piping and fuel dispensing equipment and islands were all excavated and removed from the Property in 2002 when 5,588 tons of petroleum-contaminated soil were also excavated and disposed of off-Property. In 2008, the Property was sold to the City of Mount Vernon. The current use of the Property is a retail store (Vern Fonk Insurance/Cricket Wireless) with a 1,954 square-foot, one-story building constructed in 2016 during redevelopment of the Property.

Sources of Contamination: Known sources of contamination on the Property include six former USTs, associated piping and fuel-dispensing equipment in four pump islands. Additional sources may be associated with a former gasoline station located on the Property.

Physiographic Setting: The Site is located in the Puget Sound Lowland physiographic region of western Washington. The Site is located in the Skagit Valley at an elevation of approximately 20 feet above mean sea level. The Site is located within a meander bend of the Skagit River which flows to the southwest.

Surface/Storm Water System: The closest surface water body to the Site is the Skagit River approximately 0.5 mile southwest of the Property. Storm water runoff on and in the vicinity of the Property disperses via sheet flow to catch basins connected to the City of Mount Vernon storm water collection system.

Ecological Setting: The Site and the surrounding area provide limited terrestrial ecological habitat because it has been mostly developed with buildings and areas paved with concrete and asphalt. Land use at the Site and surrounding area makes substantial wildlife exposure unlikely.

Geology: The Site is underlain by approximately 3 feet of fill materials overlying alluvial deposits of the Skagit River to a maximum explored depth of 16 feet bgs. The alluvial deposits consist of fine to medium sand, silty fine sand and non-cohesive sandy silt in interbeds ranging in thickness from less than an inch to several feet.

Ground Water: Ground water occurs within the alluvial deposits under water table conditions at depths of approximately 6 to 8 feet bgs. Due to its location within the meander bend, the Site vicinity is underlain by an approximately east-west trending ground water flow divide which shifts north or south according to ground water gradients and interactions with the river. The resulting ground water flow directions on the Site are to the northwest, west or southwest, toward the Skagit River (**Figure 2**).

Water Supply: Ecology well log database records show no water supply wells in the vicinity of the Site. The City of Mt. Vernon's water supply is from the Judy Reservoir which is located 7 miles northeast of the Site. Judy Reservoir is filled with water that has been diverted from four creeks in an uninhabited, nine-square mile, forested area in the Cultus Mountain watershed.

Release and Extent of Soil and Ground Water Contamination:

Soil: In 2001, five soil borings were advanced to depths of 18.5 to 21.5 feet bgs and completed as monitoring wells MW-1 through MW-5. One soil sample collected from each boring was

analyzed using Washington total petroleum hydrocarbons method (WTPH-HCID). Only one of the five soil samples (MW-1 at 7.5 feet bgs) was further analyzed for TPH, BTEX, lead and methyl-tertiary butyl ether (MTBE). Concentrations of TPH-G and BTEX exceeded Method A cleanup levels.

In 2011, nine soil borings (B01; P01 through P08) were advanced on the Property to a maximum depth of 22 feet bgs. The soil borings were conducted to evaluate the current soil conditions beneath the Property in areas known to contain residual contamination following the 2002 excavation.

In 2014, eight soil borings (B101 to B108) were advanced in the west adjoining right-of-way (ROW) in an area that was originally on the Property before road widening occurred in the 1970s. The ROW was expanded again after 2002 to include an extra lane of traffic.

Ground Water: In 2001, five monitoring wells (MW-1 through MW-5) were installed on the Site. Subsequent sampling of the wells in August and December 2001 yielded concentrations of TPH-G up to 33,000 micrograms per liter ($\mu\text{g/L}$) and benzene up to 5,200 $\mu\text{g/L}$. Toluene and xylenes were also detected at concentrations exceeding Method A cleanup levels. The highest concentrations of TPH-G and benzene were detected in MW-2 and MW-5. Concentrations of TPH-D, MTBE, lead and ethylbenzene were non-detectable or below Method A.

In 2002, monitoring wells MW01 through MW05 were excavated during the interim remedial action described in the section below. Excavated monitoring wells MW01A through MW03A were replaced with monitoring wells MW01A through MW03A however MW02A was closer to MW05 than MW02.

In 2014, soil borings B107, B101 and B102 were completed as monitoring wells MW05A, MW06 and MW07 respectively. Monitoring well MW05A was installed to replace MW05.

In 2016, monitoring well MW08 was installed approximately 100 feet west of monitoring well MW05A.

In 2017, three Site monitoring wells (MW01B, MW06 and MW07) that had been previously lowered and covered with pea gravel during redevelopment were located. Monitoring wells MW09 and MW10 were installed at that time in order to further evaluate groundwater quality in the northwest portion of the Property.

Interim Actions

A 2002 interim remedial action included the removal of six USTs, associated piping and fuel dispensing pump islands and approximately 5,288 tons of petroleum-contaminated soil. The

UST and contaminated soil removal generated an approximately 70- by 30-foot excavation between 15 and 16 feet deep (**Figure 3**). Approximately 3,000 gallons of contaminated water was pumped from the excavation and removed from the Site.

Confirmation soil samples collected in the removal indicated that the contamination exceeding Method A cleanup levels remained at or near the Property line in all directions (**Figure 3**). Soil in the northwest corner of the Property was not fully excavated due to the slope of the excavation and proximity of the Property line. The soil in that part of the Site contained the highest concentrations of TPH-G (up to 16,000 mg/kg) and benzene (up to 160 mg/kg).

The UST removal report concluded that residual petroleum-contaminated soil along the north, east, south and west sidewalls was inaccessible without undermining the structural integrity of the buildings on the north and east sides of East College Way and Riverside Drive along the south and west sides of the Property respectively (**Figure 4**).

Following removal of the petroleum-contaminated soil, the floor of the excavation was lined with a 2- to 3-foot thick layer of 4- to 6-inch diameter quarry spalls over which an oxygen-releasing compound (ORC) was applied. The quarry spalls and ORC were covered with geotechnical filter fabric (Tytar) and the excavation was backfilled with compacted pit run material.

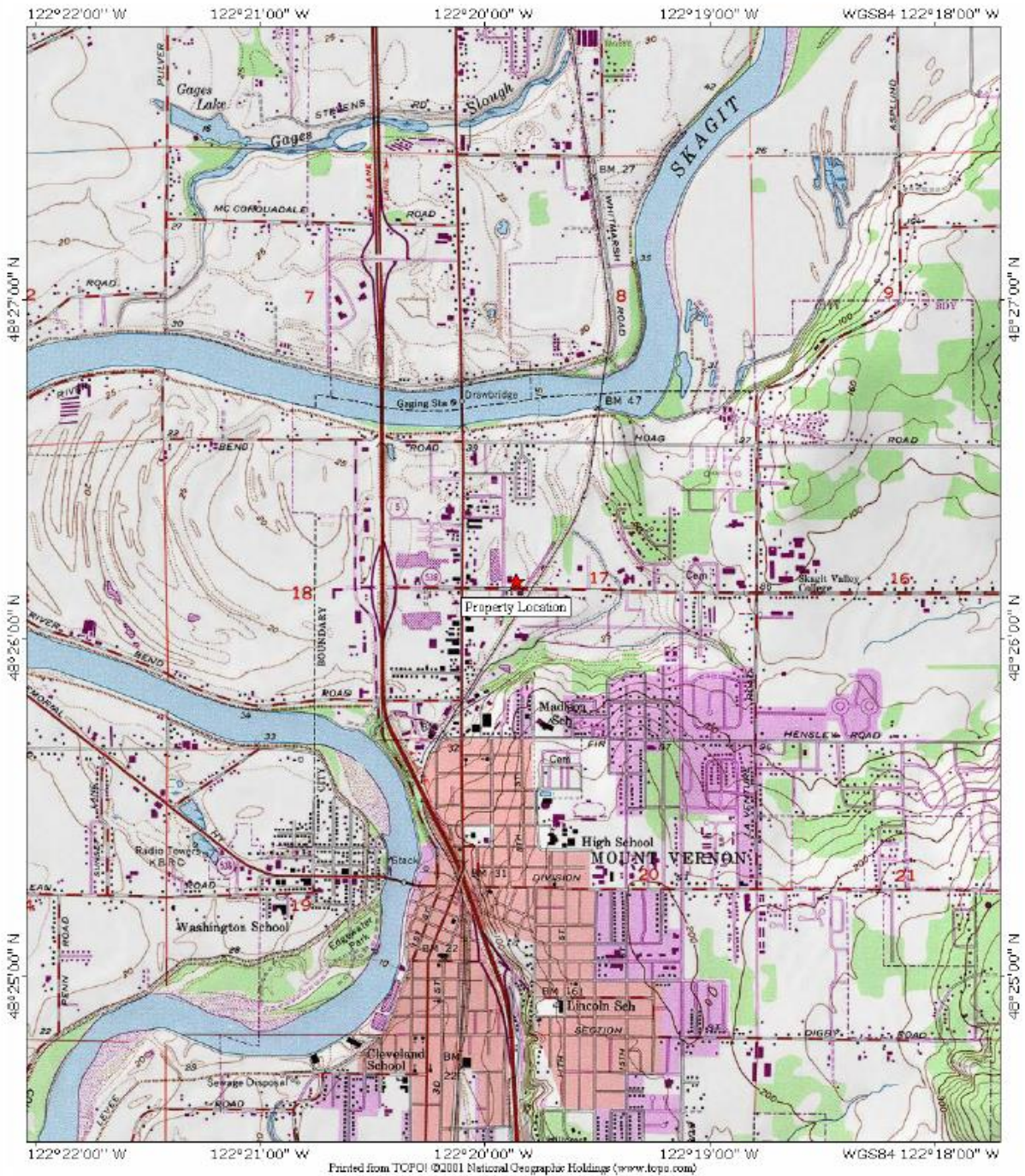
In 2004 and 2005, four in-situ chemical oxidation events were conducted in an effort to reduce concentrations of TPH-G and BTEX in Site soil and ground water. In 2005, nine injection wells (IW01 through IW09) with five-foot screens were installed to depths of 13 to 14 feet bgs in the northeast and northwest corners of the Property. In December 2005, three injection events were conducted using the injection wells and monitoring wells MW01B and MW03A. A total of 880 gallons of sodium persulfate solution was injected over three events.

In 2012, injections of sodium persulfate and hydrogen peroxide were conducted using temporary driven wells near monitoring well MW01B and injection well IW09. Following the injections, ground water samples indicated that GRPH concentrations temporarily declined but rebounded to pre-2012 levels in samples collected the following year.

In June 2018, a colloidal activated carbon (CAC) injection pilot test was conducted using monitoring wells MW05A and MW09 as test wells. The two wells were selected because ground water collected from these wells had concentrations of TPH-G above the Method A cleanup level. Push-probe injection points (PB01 through PB08 series) were installed upgradient of MW05A and MW09. A single push-probe was advanced approximately 3 feet southeast of MW09. It was not possible to install additional planned injection points due to underground utilities near MW09.

MW05A is located in the ROW west of the Property. In 2018, five push-probe borings (PB01 (06/2018) through PB05 (06/2018) were advanced on the Property in a north-south trending line to the southeast of MW05A. Batch injections of the CAC slurry mix were completed at 1-foot intervals between 8 and 13 feet bgs.

Site Diagrams



Date: June 13, 2008
 Drawn By: C. League
 Chk By: M. Sanchez
 SES Project No.: 0271-4
 File ID: 271-4 Figure 1 - Site Loc Map

Tesoro Service Station -
 #62172
 401 East College Way
 Mount Vernon, Washington

FIGURE 1
 Property Location and
 Topographic Map

