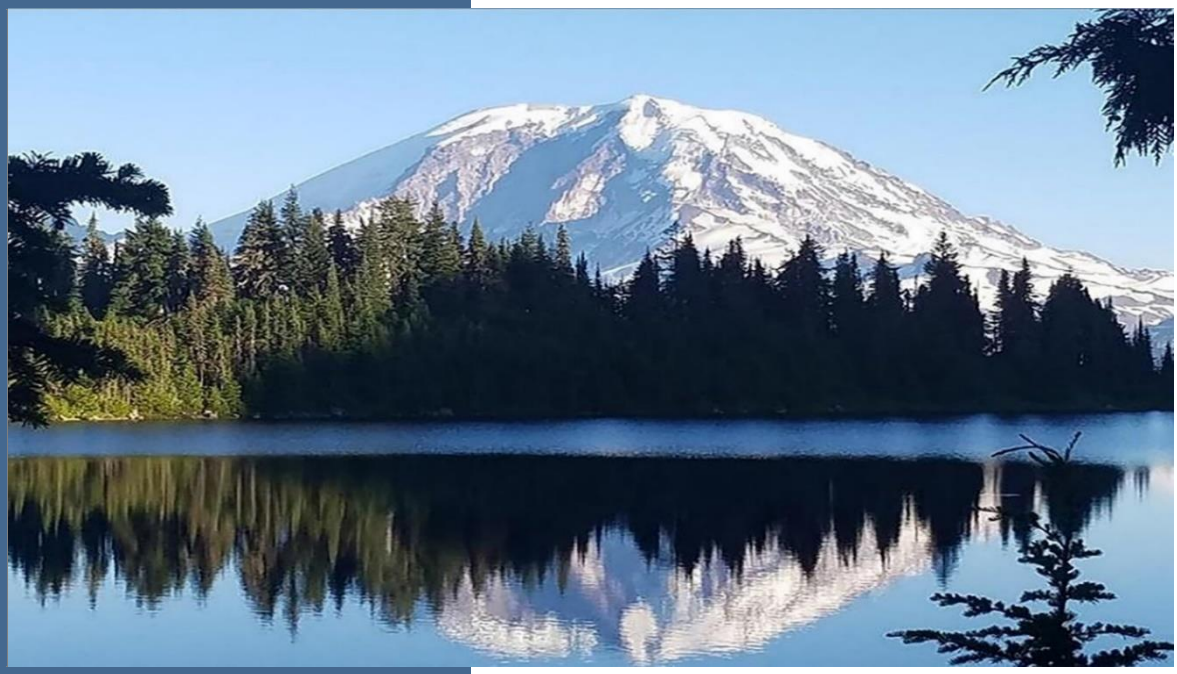

First Periodic Review
Chevron Tank Farm Port WA Narrows

1310 Highland Avenue
Bremerton, WA, Kitsap County

By

Headquarters Cleanup Section

For the

Toxics Cleanup Program

Washington State Department of Ecology

Headquarters

Olympia, Washington

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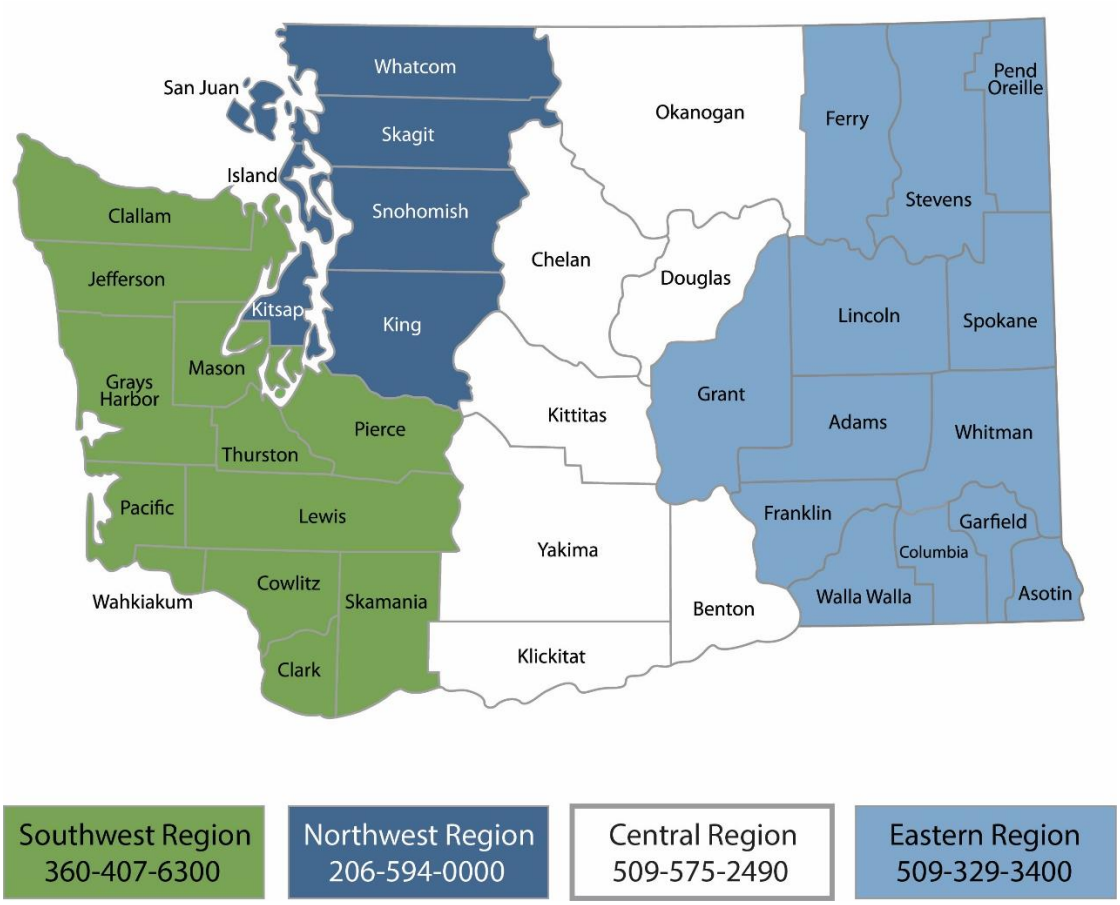
[1] https://apps.ecology.wa.gov/cleanupsearch/site/285
[2] https://ecology.wa.gov/About-us/Who-we-are/Our-Programs/Toxics-Cleanup

Department of Ecology's Regional Offices

Map of Counties Served



Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Headquarters	Across Washington	PO Box 47600 Olympia, WA 98504	360-407-6000

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Introduction

The Washington State Department of Ecology (Ecology) reviewed post-cleanup site conditions and monitoring data to ensure human health and the environment are being protected at the Chevron Tank Farm Port WA Narrows cleanup site (Site). Site cleanup was implemented under the Model Toxics Control Act (MTCA) regulations, Chapter 173-340 Washington Administrative Code (WAC)[3].

Cleanup activities at this Site were completed under Agreed Orders DE7TCPHQ-5024 and DE12TCPHQ9509. Residual concentrations of gasoline, diesel, and benzene that exceeded MTCA cleanup levels remain on the property. The MTCA cleanup levels for soil and groundwater are established under WAC 173-340-740[4] and WAC 173-340-720,[5] respectively.

Ecology determined institutional controls in the form of an environmental covenant would be required as part of the cleanup action for the Site. WAC 173-340-420(2)[6] requires Ecology to conduct a periodic review of certain sites every five years. For this Site, a periodic review is required because an institutional control is required as part of the cleanup.

When evaluating whether human health and the environment are being protected, Ecology must consider the following factors (WAC 173-340-420(4)[7]:

a) The effectiveness of ongoing or completed cleanup actions, including the effectiveness of engineered controls and institutional controls in limiting exposure to hazardous substances remaining at the Site.

b) New scientific information for individual hazardous substances or mixtures present at the Site.

c) New applicable state and federal laws for hazardous substances present at the site.

d) Current and projected Site and resource uses.

e) The availability and practicability of more permanent remedies.

f) The availability of improved analytical techniques to evaluate compliance with cleanup levels.

Ecology publishes a notice of all periodic reviews in the *Site Register*[8] and provides an opportunity for public comment.

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[3] https://app.leg.wa.gov/wac/default.aspx?cite=173-340
[4] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-740
[5] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-720
[6] https://app.leg.wa.gov/wac/default.aspx?cite=173-340-420
[7] https://app.leg.wa.gov/wac/default.aspx?cite=173-340-420
[8] https://ecology.wa.gov/regulations-permits/guidance-technical-assistance/site-register-lists-and-data#SiteRegister

Summary of Site Conditions

Site description and history

The Former Chevron Property is a 1.4-acre waterfront property located adjacent to Evergreen Rotary Park on the Port Washington Narrows (Appendix A). The historical bulk fuel tank farm operated at the Site from prior to 1946 until circa 1988. Based on aerial photographs, the facility was expanded northward to its present boundaries between 1946 and 1963 (Appendix B) by the placement of medium dense slightly silty sandy gravel to gravely very sandy silt fill in the intertidal zone. The Fill created a relatively level "lower yard" area where commercial fueling operations were conducted. The Site uplands or "upper yard" are the former location of the aboveground bulk fuel tanks. The majority of the Site's shoreline is armored with concrete rubble or steel and wooden bulkheads. Products handled at the tank farm consisted primarily of diesel and gasoline. Fuel was offloaded from barges at a fueling pier in the Port Washington Narrows and pumped through aboveground piping to twelve aboveground storage tanks located in the upper yard (tank volumes not available). Fuel transfer also occurred through the use of underground piping. This is supported by observations made during the Initial Assessment, when corroded steel piping was exposed in a soil excavation conducted to remove hot spot soils in the lower yard. Leaks from this underground piping are the likely source of most of the subsurface contamination at the Site. Fuel was loaded from the aboveground storage tanks to tank trucks at four loading racks located in the lower yard. Piping south of the former garage extended underground beneath the driveway to supply fuel to the southwestern loading rack (Appendix B). All above ground structures were removed by the end of 1988.

A vicinity map is in Appendix A, and a Site plan is in Appendix B.

Site investigations

In August of 1986, two groundwater monitoring wells were installed on-Site. Petroleum odors from soil samples and drill cuttings were observed. Flammable gases were also observed in the well boring. Both wells were destroyed by November of 1988 (GeoEngineers 1988).

In September of 1988, seven test pits and nine groundwater monitoring wells were installed on Site. Soil and groundwater samples were collected from each monitoring well and soil samples from each test pit. The samples were analyzed for gasoline, diesel, benzene, ethylbenzene, toluene, xylene, and total petroleum hydrocarbons.

- Gasoline was detected in seven of ten soil samples, with five of seven soil samples exceeding the 2025 MTCA Method A Cleanup levels (CULs).
- Diesel #1 was detected in two of ten soil samples, with one of two concentrations exceeding the 2025 MTCA Method A CUL.
- Diesel #2 was detected in four of ten soil samples, with all concentrations below the 2025 MTCA Method A CUL.

- Benzene was detected in one of nine soil samples, with a concentration exceeding the 2025 MTCA Method A CUL.
- Ethylbenzene and toluene were detected in five of nine soil samples, with all concentrations exceeding their respective 2025 MTCA Method A CUL.
- Xylene was detected in six of nine soil samples, with all concentrations exceeding the 2025 MTCA Method A CUL.

For soil samples from the test pits, gasoline was detected in five of seven samples, with four of five concentrations exceeding the 2025 MTCA Method A CUL.

- Diesel #1 and benzene were not detected in any of the test pit samples.
- Diesel #2 was detected in five of seven soil samples, with one concentration exceeding the 2025 MTCA Method A CUL.
- Ethylbenzene was detected in four of seven soil samples, with all four concentrations exceeding the 2025 MTCA Method A CUL.
- Xylene was detected in five of seven soil samples, with all five concentrations exceeding the 2025 MTCA Method A CUL.
- Toluene was detected in one of seven soil samples, with the concentration exceeding the 2025 MTCA Method A CUL.

Nine groundwater samples were collected from the monitoring wells and analyzed for total petroleum hydrocarbons, benzene, ethylbenzene, toluene, and xylene.

- Total petroleum hydrocarbons were detected in six of nine groundwater samples, with a seventh sample containing 75% naphtha.
- Benzene and toluene were detected in four of nine samples, with all eight concentrations exceeding their respective 2025 MTCA Method A CULs.
- Ethylbenzene was detected in eight of nine groundwater samples, with all eight concentrations exceeding the 2025 MTCA Method A CUL.
- Xylene was detected in seven of nine groundwater samples, with all seven concentrations exceeding the 2025 MTCA Method A CUL.
- The thickness of free product in two monitoring wells was measured, with the results of 1.35 inches (MW-4) and 0.02 inches (MW-8).

In March/April of 1989, the thickness of free product was measured in the same two groundwater monitoring wells, with results of 0.19 inches to 4.29 inches (late March) and 0.26 inches to 4.02 inches (early April), MW-4 and MW-8, respectively.

In April of 1989, nine test pits were excavated on-Site. Eighteen soil samples from the test pits were analyzed, five for total petroleum hydrocarbons and thirteen for gasoline and diesel.

- Total petroleum hydrocarbons were detected in all five soil samples, with all five concentrations below the 2025 MTCA Method A CUL for diesel.
- Gasoline was detected in eight of thirteen soil samples, with two of eight concentrations exceeding the 2025 MTCA Method A CUL.

- Diesel was detected in three of thirteen soil samples, with one of three concentrations exceeding the 2025 MTCA Method A CUL.

In August of 1989, three additional groundwater monitoring wells and a vapor extraction well were installed. Groundwater samples were collected from one new well and two existing wells and analyzed for benzene, ethylbenzene, toluene, and xylene (Hart Crowser 1989).

In August of 1993, nine additional soil borings were installed on-Site. The soil borings were subsequently converted to groundwater monitoring wells. Thirteen soil samples were collected from the nine soil borings and analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, xylene, lead, and polycyclic aromatic hydrocarbons.

- Gasoline was detected in four of thirteen soil samples, with three of four concentrations exceeding the then MTCA Method A CUL of 100 milligrams per Kilogram (mg/Kg).
- Diesel was detected in eight of thirteen soil samples, with two of eight concentrations exceeding the then MTCA Method A CUL of 200 mg/Kg.
- Heavy Oil was detected in four of thirteen soil samples, with one concentration exceeding the then MTCA Method A CUL of 200 mg/Kg.
- Benzene was detected in three of thirteen soil samples, with one concentration exceeding the then MTCA Method A CUL of 0.5 mg/Kg.
- Ethylbenzene and toluene were detected in four of thirteen soil samples, with all concentrations below their respective then MTCA Method A CULs of 20 mg/Kg and 40 mg/Kg.
- Xylene was detected in five of thirteen soil samples, with one of five concentrations exceeding the then MTCA Method A CUL of 20 mg/Kg.
- Lead was detected in seven of thirteen soil samples, with all concentrations below the then MTCA Method A CUL of 250 mg/Kg.
- Naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene, separately or together, were detected in three of thirteen soil samples, with all concentrations below the then MTCA CUL of 1 mg/Kg.
- Polycyclic aromatic hydrocarbons (fluorene, phenanthrene, anthracene, fluoranthene, and pyrene) were detected in three of thirteen soil samples, in various combinations, with all concentrations well below their respective 2025 MTCA Method B CULs.

Groundwater samples were collected from eight of the new wells and four existing wells and analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, xylene, lead, and eight carcinogenic polycyclic aromatic hydrocarbons.

- Gasoline was detected in eight of twelve groundwater samples, with four of eight concentrations exceeding the then MTCA Method A CUL (1,000 micrograms per liter [µg/l]).
- Diesel was detected in all twelve groundwater samples, with all concentrations below the then MTCA Method A CUL (1,000 µg/l).
- Heavy Oil was detected in seven of twelve groundwater samples, with all concentrations below the then MTCA Method A CUL (1,000 µg/l).

- Benzene was detected in eight of twelve groundwater samples, with seven of eight concentrations exceeding the then MTCA Method A CUL (1 µg/l).
- Toluene was detected in seven of twelve groundwater samples, with two of seven concentrations exceeding the then MTCA Method A CUL (40 µg/l).
- Ethylbenzene was detected in eight of twelve groundwater samples, with four of eight concentrations exceeding the then MTCA Method A CUL (30 µg/l).
- Xylene was detected in ten of twelve groundwater samples, with four of ten concentrations exceeding the then MTCA Method A CUL (20 µg/l).
- Lead was detected in nine of twelve groundwater samples, with seven of nine concentrations exceeding the then MTCA Method A CUL (5 µg/l).
- Carcinogenic polycyclic aromatic hydrocarbons were detected in three of twelve groundwater samples analyzed, with seven, five, and two being found in their respective samples, with all concentrations exceeding the then MTCA Method A CUL (0.1 µg/l).

In 1994, nine groundwater monitoring wells were sampled in March, May, September, and December, with an additional six wells sampled only in May and December. The groundwater samples were analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, xylene, and lead.

- Dissolved lead was detected in seventeen of forty-eight samples, with fourteen of seventeen concentrations exceeding the then MTCA Method A CUL of 5 µg/l.
- Xylenes were detected in thirty-three of forty-seven samples, with fourteen of thirty-three concentrations exceeding the MTCA Method A CUL.
- Toluene was detected in twenty-eight of forty-seven samples, with nine of twenty-eight concentrations exceeding the MTCA Method A CUL.
- Ethylbenzene was detected in thirty-two of forty-seven samples, with eleven of thirty-two concentrations exceeding the MTCA Method A CUL.
- Benzene was detected in twenty-four of forty-seven samples, with twenty-one of twenty-four concentrations exceeding the MTCA Method A CUL.
- Gasoline was detected in thirty-six of forty-seven samples, with twenty of thirty-six concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.
- Diesel was detected in forty-two of forty-seven samples, with thirty-eight of forty-two concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.
- Heavy Oil was detected in twenty of forty-seven samples, with sixteen of twenty concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.

In 1995, the same nine groundwater monitoring wells were sampled in March, May, September, and December with an additional six wells sampled only in May and December. The groundwater samples were analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, and xylene.

- Xylene was detected in twenty-seven of forty-nine samples, with fourteen of twenty-seven concentrations exceeding the MTCA Method A CUL.
- Toluene was detected in twenty-three of forty-nine samples, with nine of twenty-three concentrations exceeding the MTCA Method A CUL.

- Ethylbenzene was detected in twenty-four of forty-nine samples, with eleven of twenty-four concentrations exceeding the MTCA Method A CUL.
- Benzene was detected in twenty-nine of forty-nine samples, with fifteen of twenty-nine concentrations exceeding the MTCA Method A CUL.
- Gasoline was detected in forty of forty-nine samples, with twenty-four of forty concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.
- Diesel was detected in forty-three of forty-nine samples, with thirty-seven of forty-three concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.
- Heavy Oil was detected in twenty-seven of forty-nine samples, with twenty-five of twenty-seven concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.

In 1996, four groundwater monitoring wells were sampled in March, June, September, and December and an additional twelve wells were sampled once, either in March or June. The groundwater samples were analyzed for gasoline, diesel, oil, benzene, ethylbenzene, toluene, and xylene.

- Xylene was detected in fourteen of twenty-eight samples, with ten of fourteen concentrations exceeding the MTCA Method A CUL.
- Toluene was detected in eight of twenty-five samples, with five of eight concentrations exceeding the MTCA Method A CUL. Four of the exceedances occurred in a single well (MW-21).
- Ethylbenzene was detected in fifteen of twenty-nine samples, with nine of fifteen concentrations exceeding the MTCA Method A CUL. Four of the exceedances occurred in a single well (MW-21).
- Benzene was detected in sixteen of twenty-nine samples, with nine of sixteen concentrations exceeding the MTCA Method A CUL.
- Gasoline was detected in twenty-five of twenty-nine samples, with fifteen of twenty-five concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.
- Diesel was detected in twenty-seven of twenty-nine samples, with twenty-four of twenty-seven concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.
- Heavy Oil was detected in twenty of twenty-nine samples, with twelve of twenty concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l. Four of the twelve exceedances occurred in a single well (MW-13).

In 1997, six groundwater monitoring wells were sampled in April, September, and December while eight additional wells were sampled once, in September. The groundwater samples were analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, and xylene.

- Xylene was detected in twelve of twenty-six samples, with eight of twelve concentrations exceeding the MTCA Method A CUL. Six of the eight exceedances occurred in two wells (MW-9 and MW-21).
- Toluene was detected in twelve of twenty-six samples, with four of twelve concentrations exceeding the MTCA Method A CUL. Three of four exceedances occurred in one well (MW-21).

- Ethylbenzene was detected in thirteen of twenty-six samples, with eight of thirteen concentrations exceeding the MTCA Method A CUL. Five of eight exceedances occurred in two wells (MW-9, MW-21).
- Benzene was detected in sixteen of twenty-six samples, with nine of sixteen concentrations exceeding the MTCA Method A CUL. Three of nine exceedances occurred in a single well (MW-9).
- Gasoline was detected in twenty-five of twenty-six samples, with ten of twenty-five concentrations exceeding the then MTCA Method A CUL of 1.000 µg/l.
- Diesel was detected in all twenty-six samples, with nineteen of twenty-six concentrations exceeding the then MTCA Method A CUL of 1.000 µg/l. Nine of nineteen exceedances were due to three wells (MW-9, MW-22, MW-23).
- Heavy Oil was detected in twelve of twenty-six samples, with eight of twelve concentrations exceeding the then MTCA Method A CUL of 1.000 µg/l. Three of eight exceedances were due to a single well (MW-9).

In 1998, five groundwater monitoring wells were sampled in March and June while six additional wells were sampled once, most in June. The groundwater samples were analyzed for gasoline, diesel, oil, benzene, ethylbenzene, toluene, and xylene.

- Xylene was detected in nine of sixteen samples, with five of nine concentrations exceeding the MTCA Method A CUL.
- Toluene was detected in eight of sixteen samples, with three of eight concentrations exceeding the MTCA Method A CUL.
- Ethylbenzene was detected in six of sixteen samples, with all six concentrations exceeding the MTCA Method A CUL.
- Benzene was detected in nine of sixteen samples, with six of nine concentrations exceeding the MTCA Method A CUL.
- Gasoline was detected in thirteen of sixteen samples, with eight of thirteen concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.
- Diesel was detected in thirteen of sixteen samples, with seven of thirteen concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.
- Heavy Oil was detected in one of sixteen samples, with a concentration below the then MTCA Method A CUL of 1,000 µg/l.

In 1999, eight groundwater monitoring wells were sampled in March and August while eight additional wells were sampled either in March or August, mostly in March. The groundwater samples were analyzed for gasoline, diesel, oil, benzene, ethylbenzene, toluene, and xylene.

- Xylene was detected in seventeen of twenty-four samples, with seven of seventeen concentrations exceeding the MTCA Method A CUL.
- Toluene was detected in eight of twenty-four samples, with three of eight concentrations exceeding the MTCA Method A CUL. Two of the three exceedances were in one well (MW-21).

- Ethylbenzene was detected in thirteen of twenty-four samples, with five of thirteen concentrations exceeding the MTCA Method A CUL. Four of the five exceedances were in two wells (MW-9, MW-21).
- Benzene was detected in sixteen of twenty-four samples, with eight of sixteen concentrations exceeding the MTCA Method A CUL. Two of the eight exceedances occurred in one well (MW-9).
- Gasoline was detected in twenty of twenty-four samples, with seven of twenty concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l. Four of the seven exceedances occurred in two wells (MW-6, MW-9).
- Diesel was detected in twenty-three of twenty-four samples, with sixteen of twenty-three concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.
- Heavy Oil was detected in eight of twenty-four samples, with four of eight concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l. Two of the four exceedances occurred in a single well (MW-6).

In 2000, nine groundwater monitoring wells were sampled in March and October while two additional wells were sampled in March. The groundwater samples were analyzed for gasoline, diesel, oil, benzene, ethylbenzene, toluene, and xylene.

- Xylene was detected in thirteen of twenty samples, with eight of thirteen concentrations exceeding the MTCA Method A CUL. Four of the eight exceedances occurred in two wells (MW-9, MW-21).
- Ethylbenzene was detected in fourteen of twenty samples, with six of fourteen concentrations exceeding the MTCA Method A CUL. Four of the six exceedances occurred in two wells (MW-9, MW-21).
- Toluene was detected in eleven of twenty samples, with three of eleven concentrations exceeding the MTCA Method A CUL. Two of the three exceedances occurred in well MW-21.
- Benzene was detected in eleven of twenty samples, with eight of eleven concentrations exceeding the MTCA Method A CUL. The exceedances occurred in four wells: MW-6, MW-9, MW-14, and MW-21.
- Gasoline was detected in all twenty samples, with eleven of twenty concentrations exceeding the MTCA Method A CUL.
- Diesel was detected in all twenty samples, with seventeen of twenty concentrations exceeding the MTCA Method A CUL.
- Heavy Oil was detected in six of twenty samples, with four of six concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.

In 2001, eight groundwater monitoring wells were sampled in April and September. The groundwater samples were analyzed for gasoline, diesel, oil, benzene, ethylbenzene, toluene, and xylene.

- Xylene was detected in thirteen of sixteen samples, with five of thirteen concentrations exceeding the MTCA Method A CUL. The exceedances occurred in three wells: MW-6, MW-9, and MW-21.

- Ethylbenzene was detected in eleven of sixteen samples, with six of eleven concentrations exceeding the MTCA Method A CUL. The exceedances occurred in wells MW-6, MW-9, and MW-21.
- Toluene was detected in ten of sixteen samples, with three of ten concentrations exceeding the MTCA Method A CUL. Th exceedances occurred in two wells: MW-9 and MW-21.
- Benzene was detected in fifteen of sixteen samples, with nine of fifteen concentrations exceeding the MTCA Method A CUL.
- Gasoline was detected in fifteen of sixteen samples, with eleven of fifteen concentrations exceeding the MTCA Method A CUL.
- Diesel was detected in fifteen of sixteen samples, with thirteen of fifteen concentrations exceeding the MTCA Method A CUL.
- Heavy Oil was detected in nine of sixteen samples, with seven concentrations exceeding the MTCA Method A CUL.

In 2002, eight groundwater monitoring wells were sampled in March and September. One well was not sampled in September due to the presence of free product. The groundwater samples were analyzed for gasoline, diesel, oil, benzene, ethylbenzene, toluene, and xylene.

- Xylene was detected in ten of fifteen samples, with five of fifteen concentrations exceeding the MTCA Method A CUL.
- Ethylbenzene was detected in eight of fifteen samples, with four of eight concentrations exceeding the MTCA Method A CUL. The exceedances occurred in MW-9 and MW-21.
- Toluene was detected in five of fifteen samples, with two of five concentrations exceeding the MTCA Method A CUL. Both exceedances occurred in MW-21.
- Benzene was detected in six of fifteen samples, with five of six concentrations exceeding the MTCA Method A CUL.
- Gasoline was detected in thirteen of fifteen samples, with nine of thirteen concentrations exceeding the MTCA Method A CUL.
- Diesel was detected in fourteen of fifteen samples, with twelve of fourteen concentrations exceeding the MTCA Method A CUL.
- Heavy Oil was detected in six of fifteen samples, with five of six concentrations exceeding the MTCA Method A CUL.

In 2003, six groundwater monitoring wells were sampled and the samples analyzed for gasoline and diesel.

- Gasoline was detected in five of six samples, with three concentrations exceeding the then MTCA Method A CUL of 1,000 µg/l.
- Diesel was detected in all six groundwater samples, with four of six concentrations exceeding the MTCA Method A CUL.

In November of 2005, eighteen sediment samples were collected from inter-tidal and off-shore marine sediments and analyzed for diesel, oil, metals, semi-volatile organic compounds, polycyclic aromatic hydrocarbons, and Sediment Management Standards analytes.

No exceedances of Sediment Management Standards were found for any of the off-shore sediment samples. One inter-tidal sediment sample had exceedances of several polycyclic aromatic hydrocarbons. A follow-up bioassay was performed on the sample, with the sample passing. No further concerns regarding sediment contamination were considered necessary.

In April of 2007, Ecology collected sediment samples from thirteen locations including inter-tidal areas at the Site and from Smith Cove. Eight of the samples were analyzed for biological and chemical sediment management standards analytes. Two samples failed sediment quality standards for phthalates and phenol. Neither sample failed the chemical cleanup screening level criteria. None of the biological tests failed the sediment quality standards or chemical screening level criteria.

In March of 2008, ten groundwater monitoring wells were sampled and the samples analyzed for gasoline, diesel, oil, benzene, ethylbenzene, toluene, and xylene. Six samples were also analyzed for lead and polycyclic aromatic hydrocarbons. There were no exceedances of dissolved lead, or polycyclic aromatic hydrocarbons in any of the samples.

- Xylene was detected in four of ten samples, with all four concentrations below the MTCA Method A CUL.
- Toluene was detected in one of ten samples, with a concentration below the MTCA Method A CUL.
- Ethylbenzene was detected in four samples, with all concentrations below the MTCA Method A CUL.
- Lead was detected in five of six samples, with one concentration exceeding the MTCA Method A CUL.
- Benzene was detected in four samples, with three of four concentrations exceeding the MTCA Method A CUL.
- Gasoline was detected in four of ten samples, with all four concentrations exceeding the MTCA Method A CUL.
- Diesel was detected in six samples, with five of six concentrations exceeding the MTCA Method A CUL.
- Heavy Oil was detected in three of ten samples, with one concentration exceeding the MTCA Method A CUL.

Cleanup actions

In May of 1989, a free phase recovery system was installed in two monitoring wells. The soil vapor extraction system operated from 1990 to 1994. An estimated 195,000 pounds of hydrocarbons were removed.

In June of 2009, three hot spot areas of soil contamination were excavated and the contaminated soil taken off-site to a permitted facility. A total of 1,644 tons of contaminated soil and 32 tons of contaminated wood and miscellaneous concrete debris were disposed of. Eighteen confirmational soil samples were collected and analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, xylene, and polycyclic aromatic hydrocarbons. There were no exceedances above the respective MTCA Method A CULs for any analyte. Following the excavation, a chemical oxidant was added to the soil to enhance microbial activity.

In December of 2009, thirteen soil samples were collected and analyzed for various combinations of the same analytes. Two samples were analyzed for diesel and heavy oil. There were no exceedances of diesel or heavy oil in either sample. Ten samples were analyzed for gasoline, with seven concentrations exceeding the MTCA Method A CUL. Twelve soil samples were analyzed for various combinations of benzene, ethylbenzene, toluene, and xylene. Four samples had no exceedances of any of the four analytes. Four samples had exceedances of xylene while three samples had exceedances of ethylbenzene. Eight samples had exceedances of benzene. Four samples had exceedances of carcinogenic polycyclic aromatic hydrocarbons while two of the four samples also had exceedances of benzo(a)pyrene (Parametrix 2011).

In January, May, and August of 2010 and April of 2011, twelve groundwater monitoring wells were sampled to determine the progress of the remediation. The samples were analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, and xylene. All twelve wells were analyzed for polycyclic aromatic hydrocarbons in January of 2010. Two wells were analyzed for carcinogenic polycyclic aromatic hydrocarbons in May and August of 2010. The same two wells were analyzed for polycyclic aromatic hydrocarbons in April of 2011.

- There were no exceedances of MTCA Method A CUL for polycyclic aromatic hydrocarbons.
- For iron and manganese, there were no exceedances of MTCA secondary CULs in any round for which they were sampled.
- Lead was analyzed for in all twelve samples, with two of twelve concentrations exceeding the MTCA Method A CUL in January of 2010.

In May and August of 2010 and April of 2011, two wells (MW-9R and MW-21R) were sampled for total and dissolved lead.

- All six concentrations for total lead and both August 2010 concentrations for dissolved lead exceeded the MTCA Method A CUL.

- There were no detections of ethylbenzene, toluene, or xylene in any sample in any of the four rounds. Benzene was detected in four wells (MW-4R, MW-9R, MW-13R, and MW-21R) in all four rounds, with all sixteen concentrations exceeding the MTCA Method A CUL.
- Benzene was also detected in one other well in January of 2010 and in a second other well in May of 2010, with both concentrations exceeding the MTCA Method A CUL.
- Gasoline was detected in three wells (MW-4, MW-9, MW-21) in all four rounds, with all twelve concentrations exceeding the MTCA Method A CUL.
- Gasoline was detected in three rounds in one well (MW-25) and two rounds in one well (MW-10), with all five concentrations above the MTCA Method A CUL. Gasoline was not detected in all rounds in five wells and the detected concentrations were below the MTCA Method A CUL in the remaining wells in all rounds.
- Diesel was not detected in eight wells in any of the four rounds. Diesel was detected in three rounds in three wells and one round in one well, with eight of ten concentrations exceeding the MTCA Method A CUL.
- Heavy Oil was detected in one well in one round, with a concentration exceeding the MTCA Method A CUL.

In September of 2011, ten groundwater wells were sampled and the samples analyzed for gasoline, diesel, oil, benzene, ethylbenzene, toluene, and xylene.

- Heavy Oil was not detected in any of the ten samples.
- Diesel was detected in two of ten samples, with one of two concentrations exceeding the MTCA Method A CUL.
- Gasoline was detected in nine of ten samples, with four of nine concentrations exceeding the MTCA Method A CUL.
- Ethylbenzene, toluene, and xylene were not detected in any of four samples. Benzene was detected in seven samples, with three of seven concentrations exceeding the MTCA Method A CUL.

Groundwater monitoring

In January of 2013, long-term monitoring of the Site groundwater began, with a second round of sampling in July of 2013. Eleven groundwater wells were sampled and the samples analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, xylene, iron, and manganese. One sample was analyzed for lead (Parametrix, December 2013).

- Lead was only detected in the July round, with a concentration below the MTCA Method A CUL.
- Gasoline was detected in fifteen of twenty-two samples, with nine of fifteen concentrations exceeding the MTCA Method A CUL.
- Diesel was detected in two of twenty-one samples, with one concentration exceeding the MTCA Method A standard.

- Heavy Oil was detected in two of twenty-one samples, both in the July round, with one concentration exceeding the MTCA Method A CUL.
- Benzene was detected in thirteen of twenty-two samples, with eleven of thirteen concentrations exceeding the MTCA Method A CUL.
- Ethylbenzene was detected in twelve of twenty-two samples, with all concentrations below the MTCA Method A CUL.
- Toluene was detected in nine of twenty-two samples, with all concentrations below the MTCA Method A CUL.
- Xylene was detected in ten of twenty-two samples, with all concentrations below the MTCA Method A CUL.

In January and August of 2014, the third and fourth rounds of long-term monitoring occurred. The same eleven wells were sampled and the samples analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, xylene, iron, and manganese (Parametrix, January 2014 and June 2015).

- Gasoline was detected in ten of twenty-two samples, with five of ten concentrations exceeding the MTCA Method A CUL.
- Diesel was detected in four of twenty-two samples, with three of four concentrations exceeding the MTCA Method A CUL.
- Heavy Oil was detected in three of twenty-two samples, with two of three concentrations exceeding the MTCA Method A CUL.
- Benzene was detected in eight of twenty-two samples, with six of eight concentrations exceeding the MTCA Method A CUL.
- Ethylbenzene was detected in nine of twenty-two samples, with all concentrations below the MTCA Method A CUL.
- Toluene was detected in four of twenty-two samples, with all concentrations below the MTCA Method A CUL.
- Xylene was detected in eight of twenty-two samples, with all concentrations below the MTCA Method A CUL.

In January and July of 2015, the fifth and sixth rounds of long-term monitoring occurred. The same eleven wells were sampled and the samples analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, and xylene. In July, the number of sampled wells was reduced to nine. Nine wells, including the two wells not sampled in July, were analyzed for iron and manganese. One sample was analyzed for lead (Parametrix, June 2015 and January 2016).

- Lead was not detected in the sample.
- Gasoline was detected in nine of twenty samples, with four concentrations exceeding the MTCA Method A CUL (MW-4R, MW-10R, MW-21R).
- Diesel was detected in one of eighteen samples, with a concentration exceeding the MTCA Method A CUL.
- Heavy Oil was detected in one of eighteen samples, with a concentration below the MTCA Method A CUL.

- Benzene was detected in nine wells, with eight of nine concentrations exceeding the MTCA Method A CUL.
- Toluene was detected in three of twenty samples, with all concentrations below the MTCA Method A CUL. Two of the three detections were in well MW-21R.
- Ethylbenzene was detected in six of twenty samples, with all concentrations below the MTCA Method A CUL.
- Xylene was detected in six of twenty samples, with all concentrations below the MTCA Method A CUL. Xylene was detected in both rounds in wells MW-4R, MW-9R, and MW-21R.

In January and July of 2016, the seventh and eighth rounds of long-term monitoring occurred. Ten wells were sampled and the samples analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, xylene, iron, and manganese. Three wells were only analyzed for gasoline, benzene, ethylbenzene, toluene, and xylene (Parametrix, October 2016).

- Gasoline was detected in eight of nineteen samples, with five concentrations exceeding the MTCA Method A CUL. Four of the five exceedances occurred in wells MW-10R and MW-21.
- Diesel was detected in one of thirteen samples, with a concentration below the MTCA Method A CUL.
- Heavy Oil was not detected in any of thirteen samples.
- Benzene was detected in five of nineteen samples, with four of five concentrations exceeding the MTCA Method A CUL. Four of the five exceedances occurred in wells MW-4R and MW-21R.
- Toluene was detected in four of nineteen samples, with all concentrations below the MTCA Method A CUL.
- Ethylbenzene was detected in four of nineteen samples, with all four concentrations below the MTCA Method A CUL.
- Xylene was detected in six of nineteen samples, with all six concentrations below the MTCA Method A CUL.

In July of 2017, the ninth round of long-term monitoring occurred. Nine wells were sampled and the samples analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, xylene, iron, and manganese. Two wells – MW-4R and MW-13R – were only analyzed for gasoline, benzene, ethylbenzene, toluene, and xylene (Parametrix, November 2017).

- Gasoline was detected in five of nine samples, with two of five concentrations exceeding the MTCA Method A CUL. The two exceedances occurred in wells MW-10R and MW-21R.
- Diesel was detected in three of seven samples, with one concentration (MW-25) exceeding the MTCA Method A CUL.
- Heavy Oil was not detected in any of seven samples.
- Benzene was detected in four of nine samples, with two concentrations – MW-4R and MW-21R – exceeding the MTCA Method A CUL.
- Toluene was detected in two of nine samples, with both concentrations below the MTCA Method A CUL.

- Ethylbenzene was detected in three of nine samples, with all concentrations below the MTCA Method A CUL.
- Xylene was detected in two of nine samples, with both concentrations below the MTCA Method A CUL.

In July of 2018, the tenth round of long-term monitoring occurred. Ten wells were sampled and the samples analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, xylene, iron, and manganese. Two wells – MW-4R and MW-13R – were only analyzed for gasoline, benzene, ethylbenzene, toluene, and xylene. Toluene, ethylbenzene, and xylene were detected in one well – MW-21R (Parametrix, November 2019).

- Gasoline was detected in four of ten samples, with two concentrations exceeding the MTCA Method A CUL. The two exceedances occurred in wells MW-10R and MW-21R.
- Diesel was detected in one of eight samples, with the concentration exceeding the MTCA Method A CUL.
- Heavy Oil was not detected in eight samples.
- Benzene was detected in three of ten samples, with two concentrations – MW-4R and MW-21R – exceeding the MTCA Method A CUL.
- Toluene was detected in one of ten samples, with a concentration below the MTCA Method A CUL.
- Ethylbenzene was detected in one of ten samples, with a concentration below the MTCA Method A CUL.
- Xylene was detected in one of ten samples, with a concentration below the MTCA Method A CUL.

In July of 2019, the eleventh round of long-term monitoring occurred. As in 2018, ten wells were sampled and the samples analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, xylene, iron, and manganese. Three wells – MW-4R, MW-13R, and MW-22R – were only analyzed for gasoline, benzene, ethylbenzene, toluene, and xylene. Toluene and ethylbenzene were detected in wells MW-4R and MW-21R. Xylene was detected in wells MW-10R and MW-21R (Parametrix November 2019).

- Gasoline was detected in four of ten samples, with two concentrations exceeding the MTCA Method A CUL. The two exceedances occurred in wells MW-10R and MW-21R.
- Diesel and heavy oil were not detected in any of seven samples.
- Benzene was detected in three of ten samples, with two concentrations – MW-4R and MW-21R – exceeding the MTCA Method A CUL.
- Toluene was detected in two of ten samples, with both concentrations below the MTCA Method A CUL.
- Ethylbenzene was detected in two of ten samples, with both concentrations below the MTCA Method A CUL.
- Xylene was detected in two of ten samples, with both concentrations below the MTCA Method A CUL.

In July of 2020, the twelfth round of long-term monitoring occurred. As in 2019, ten wells were sampled and the samples analyzed for gasoline, diesel, oil, benzene, ethylbenzene, toluene, xylene, iron, and manganese. Three wells – MW-4R, MW-13R, and MW-22R – were only analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, and xylene (Parametrix January 2021).

- Gasoline was detected in four of ten samples, with two concentrations exceeding the MTCA Method A CUL. The two exceedances occurred in wells MW-10R and MW-21R.
- Diesel was detected in four of ten samples, with three concentrations exceeding the MTCA Method A CUL.
- Heavy Oil was detected in two of ten samples, with two concentrations exceeding the MTCA Method A CUL.
- Benzene was detected in two of ten samples, with both concentrations – MW-4R and MW-21R – exceeding the MTCA Method A CUL.
- Toluene, ethylbenzene, and xylene were only detected in the same two wells – MW-4R and MW-21R, with all six concentrations below their respective MTCA Method A CUL.

In July of 2021, the thirteenth round of long-term monitoring occurred. As in 2020, nine wells were sampled and the samples analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, xylene, iron, and manganese. Three wells – MW-4R, MW-13R, and MW-22R – were only analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, and xylene. All results for MW-4R were rejected (Parametrix, November 2021).

- Gasoline was detected in three of eight samples, with two of three samples – MW-10R and MW-21R – exceeding the MTCA Method A CUL.
- Diesel was detected in two of eight samples, with one of two concentrations exceeding the MTCA Method A CUL.
- Heavy Oil was detected in two of eight samples, with one of two concentrations exceeding the MTCA Method A CUL. The same well did not have an exceedance of both diesel and oil.
- Benzene was detected in two of eight samples, with one of two concentrations exceeding the MTCA Method A CUL.
- Toluene and ethylbenzene were detected in one of eight samples, with both concentrations below their respective MTCA Method A CULs.
- Xylene was detected in three of eight samples, with all three concentrations below their MTCA Method A CUL. Benzene, ethylbenzene, toluene, and xylene were all detected in well MW-21R, with the benzene concentration exceeding the MTCA Method A CUL.

In August of 2022, the fourteenth round of long-term monitoring occurred. Eleven wells were sampled and the samples analyzed for gasoline, diesel, heavy oil, benzene, ethylbenzene, toluene, and xylene. Seven samples were also analyzed for iron and manganese (Parametrix, May 2023).

- Gasoline was detected in six of ten. samples, with two of six concentrations exceeding the MTCA Method A CULs. (MW-10R, MW-21R).

- Diesel was detected in nine of ten samples, with four of nine concentrations exceeding the MTCA CUL.
- Heavy Oil was detected in nine samples, with four of nine concentrations exceeding the MTCA CUL. When re-analyzed with a silica-gel treatment, and the diesel and oil concentrations summed, the summed concentrations were detected in three samples, with one concentration exceeding the MTCA CUL (MW-10R).
- Benzene was detected in three of ten samples (MW-4R, MW-20R, MW-21R), ethylbenzene in one of ten samples (MW-21R), toluene in one of ten samples MW-21R), and xylene in three of ten samples (MW-4R, MW-10R, MW-25). All eight detections were below their respective MTCA CULs.

In July of 2023, the fifteenth round of long-term monitoring occurred. Ten wells were sampled and the samples analyzed for gasoline, diesel, oil, benzene, ethylbenzene, toluene, and xylene. Seven samples were analyzed for iron and manganese (Parametrix, November 2023).

- Gasoline was detected in six of ten samples, with two of six concentrations exceeding the MTCA CUL (MW-10R, MW-21R).
- Diesel was detected in all ten samples, with five of ten concentrations exceeding the MTCA CUL.
- Heavy Oil was detected in all ten samples, with six of ten concentrations exceeding the MTCA CUL. When re-analyzed with a silica-gel treatment, and the diesel and heavy oil concentrations summed, the summed concentrations were detected in seven samples, with five concentrations exceeding the MTCA CUL (MW-4R, MW-10R, MW-13R, MW-22R, MW-25).
- Benzene, ethylbenzene, toluene, and xylene were all detected in two samples (MW-4R, MW-21R) with both benzene concentrations exceeding the MTCA CUL. Benzene was additionally detected in MW-20R, below the respective MTCA CUL.
- Xylene was detected in two wells (MW-10R, MW-25) with concentrations below their respective MTCA CULs.

In July and August of 2024, the sixteenth round of long-term monitoring occurred. Six wells were sampled and the samples analyzed for gasoline, diesel, oil, benzene, ethylbenzene, toluene, xylene, iron, and manganese. The other four wells (MW-4R, 13R, MW-22R, MW-26R) were blocked and could not be sampled (Parametrix, January 2025).

- Gasoline was detected in four of six wells, with two of four concentrations exceeding the MTCA CUL (MW-10R, MW-21R).
- Diesel was detected in five of six samples, with two of five concentrations exceeding the MTCA CUL (MW-10R, MW-21R).
- Heavy Oil was detected in four of six samples, with all four concentrations below the MTCA CUL. When re-analyzed with a silica-gel treatment, and the diesel and heavy oil concentrations summed, the summed concentrations were detected in all six samples, with one concentration exceeding the MTCA CUL(MW-10R).
- Benzene, ethylbenzene, toluene, and xylene were all detected in one sample (MW-21R), with the benzene concentration exceeding the MTCA CUL. Xylene was detected in two

wells (MW-10R, MW-25) and benzene in one well (MW-20R), with all three concentrations below their respective MTCA CULs.

Cleanup standards

Cleanup standards include cleanup levels, the location where these cleanup levels must be met (point of compliance), and any other regulatory requirements that apply to the Site.

The WAC 173-340-704[9] states MTCA Method A may be used to establish cleanup levels at sites that have few hazardous substances, are undergoing a routine cleanup action, and where numerical standards are available for all indicator hazardous substances in the media for which the Method A cleanup level is being used. Method B may be used at any site and is the most common method for setting cleanup levels when sites are contaminated with substances not listed under Method A. Method C cleanup levels may be used to set soil and air cleanup levels at industrial sites.

MTCA Method A cleanup levels for unrestricted land use were determined to be appropriate for contaminants at this Site. The cleanup actions conducted at the Site were determined to be routine, few hazardous substances were found at the Site, and numerical standards were available in the MTCA Method A table for each hazardous substance.

The point of compliance is the area where the cleanup levels must be attained. The Site has a conditional point of compliance for soil, which was established at six feet below ground surface based on the protection of terrestrial ecological receptors.

The Site has a conditional point of compliance for groundwater, which was established at the property boundary.

Environmental/Restrictive Covenant

Ecology determined that institutional controls would be required as part of the cleanup action to document the remaining contamination, protect the cleanup action, and protect human health and the environment. On November 25, 2013, institutional controls in the form of an environmental covenant[10] (Covenant) were recorded for the Site.

The Covenant recorded for the Site imposes the following limitations:

1. No groundwater may be taken for any use from the property.
2. The Owner shall not construct structures in the northwestern half of the property (the contaminated area) that may result in the release or exposure to the environment of that contaminated soil or create a new exposure pathway without prior written approval from Ecology.

[9] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-704
[10] https://apps.ecology.wa.gov/cleanupsearch/document/157342

3. Any activity on the Property that may result in the release or exposure to the environment of the contaminated soil that was contained as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior approval from Ecology.

Periodic Review

Effectiveness of completed cleanup actions

During the Site visit Ecology conducted on June 30, 2025, it was observed that the Site is still operating as a city waterfront park. The monitoring wells were all located; however, it was observed that several needed maintenance. A photo log is in Appendix C.

Direct contact

The cleanup actions were intended to eliminate exposure to contaminated soil and groundwater at the Site. Exposure pathways to contaminated soils by ingestion and direct contact were reduced by excavation and off-Site disposal of contaminated soil followed by an 8-foot soil cover in the lower yard where contamination remained. The soil cover appears to be in satisfactory condition, and no repair, maintenance, or contingency actions are required at this time.

Protection of groundwater

Soils with petroleum hydrocarbon at concentrations exceeding MTCA Method A cleanup levels remain at the Site. As noted in the Groundwater Monitoring section, groundwater sampling has occurred annually since 2013 and will continue as contamination remains. The data shows relatively low degradation rates at the Site with concentrations appearing to stabilize from 2015 through the present (City of Bremerton, 2025).

Institutional controls

Institutional controls in the form of a Covenant were implemented at the Site in 2013. At the time of this review the Covenant was found to not be on file with the County. The City of Bremerton was notified, and they subsequently recorded the covenant on May 23, 2025, with the Kitsap County Auditor. The Covenant is now active and discoverable through the Kitsap County Auditor. Ecology found no evidence that a new instrument has been recorded that limits the effectiveness or applicability of the Covenant. This Covenant prohibits activities that will result in the release of contaminants contained as part of the cleanup action and prohibits any use of the property that is inconsistent with the Covenant, unless approved by Ecology in advance. This Covenant ensures the long-term integrity of the cleanup action will be protected.

New scientific information for individual hazardous substances or mixtures present at the Site

There is no new relevant scientific information for the hazardous substances remaining at the Site.

New applicable state and federal laws for hazardous substances present at the Site

The cleanup at the Site was governed by: Chapter 173-340 WAC (2007 ed.)]. WAC 173-340-702(12) (c)[11] [2007 ed.] provides that,

"A release cleaned up under the cleanup levels determined in (a) or (b) of this subsection shall not be subject to further cleanup action due solely to subsequent amendments to the provision in this chapter on cleanup levels, unless the department determines, on a case-by-case basis, that the previous cleanup action is no longer sufficiently protective of human health and the environment."

Although cleanup levels changed for petroleum hydrocarbon compounds as a result of modifications to MTCA in 2001, contamination remains at the Site above the new MTCA Method A and B CULs. The cleanup action is still protective of human health and the environment. A table comparing MTCA cleanup levels from 2012 with current levels is shown in Table 1 below.

Table 1. Cleanup levels for soil and groundwater contaminants

Analyte	2012 MTCA Method A Soil Cleanup Level (ppm)	2025 MTCA Method A Soil Cleanup Level (ppm)	2012 MTCA Method A Groundwater Cleanup level (ppb)	2025 MTCA Method A Groundwater Cleanup Level (ppb)
Gasoline	30/100	30/100	800/1,000	800/1,000
Diesel	2,000	2,000	500	500
Oil	2,000	2,000	500	500
Benzene	0.03	0.03	5	5
Lead	250	250	15	15

11

Benzo(a)pyrene	0.1	0.1	0.1	0.1

MTCA = Model Toxics Control Act
ppb = parts per billion
ppm = parts per million

Current and projected Site and resource use

The Site is used for recreation purposes. There have been no changes in the current or projected future Site or resource uses. The current Site use is not likely to have a negative impact on the protectiveness of the cleanup action.

Availability and practicability of more permanent remedies

The remedy implemented included containing hazardous substances, and it continues to be protective of human health and the environment. While more permanent remedies may be available, they are still not practicable at this Site.

Availability of improved analytical techniques to evaluate compliance with cleanup levels

The analytical methods used at the time of the cleanup action were capable of detection below the selected MTCA cleanup levels. The presence of improved analytical techniques would not affect decisions or recommendations made for the Site.

Conclusions

- The cleanup actions completed at the Site appear to be protective of human health and the environment.
- Soil cleanup levels have not been met at the Site; however, the cleanup action is determined to comply with cleanup standards under WAC 173-340-740(6)(f), since the long-term integrity of the containment system is ensured and the requirements for containment technologies have been met.
- Groundwater cleanup levels have not been met at the standard point of compliance for the Site, however, the cleanup action has been determined to comply with cleanup standards since the long-term integrity of the containment system is ensured, and the requirements for containment technologies are being met.
- Ecology recommends sampling the groundwater monitoring wells during the wet period, which would be between November and April and sample all 11 groundwater wells on the site.

- Ecology also recommends verifying viability of the 11 wells on site. In the last round of sampling in August 2024, only six wells were sampled. If the wells are not viable, they need to be redeveloped or decommissioned and reinstalled.
- The Covenant for the property is in place and is effective in protecting human health and the environment from exposure to hazardous substances and the integrity of the cleanup action.

Based on this periodic review, Ecology has determined the requirements of the Covenant are being followed. No additional cleanup actions are required by the property owner at this time. The property owner is responsible for continuing to inspect the Site to ensure the integrity of the cleanup action is maintained and for continued groundwater monitoring.

Next review

Ecology will schedule the next review for the Site five years from the date of this periodic review in 2031. If additional cleanup actions or institutional controls are required, the next periodic review will be scheduled five years after those activities are completed.

References

Ecology. Restrictive Environmental Covenant. November 25, 2013, and recorded May 23, 2025.

Geo Engineers. Report of Geotechnical Services – Subsurface Contamination Study – Chevron Bulk Fuel Terminal – Bremerton, Washington. November 16, 1988.

Hart Crowser. Phase I – Remediation Services – Bremerton Bulk Plant – Bremerton, Washington. May 15, 1989.

Hart Crowser. Summary of Work Accomplished to Date and Pending – Former Chevron Bremerton Bulk Plant – Bremerton, Washington. November 6, 1989.

Pacific Environmental Group. Supplemental Environmental Site Assessment – Decommissioned Chevron Bulk Terminal – No. 61001351 – 1310 Highland Avenue – Bremerton, Washington. March 10, 1994.

EMCON Northwest. Fourth Quarter (September 19 to December 22, 1994) – Vapor Extraction System Monitoring – Former Chevron Bulk Fuel Facility 61001351 – 1310 Highland Avenue – Bremerton, Washington. January 13, 1995.

Parametrix. Workplan for Remedial Investigation/Feasibility Study, Interim Action, and Shoreline Restoration – Former Chevron Property – Bremerton, Washington. September 2007.

Parametrix. Former Chevron Property – Remedial Investigation/Feasibility Study Report. September 2011.

Parametrix. Former Chevron Property – Draft Cleanup Action Plan. January 2012.

Parametrix. Technical Memorandum – Former Chevron Property – Long Term Groundwater Monitoring Event 2. December 13, 2013.

Parametrix. Technical Memorandum – Former Chevron Property – Long Term Groundwater Monitoring Event 3. March 12, 2014.

Parametrix. Technical Memorandum – Former Chevron Property – Long Term Groundwater Monitoring Event 4. June 2, 2015.

Parametrix. Technical Memorandum – Former Chevron Property – Long Term Groundwater Monitoring Event 5. June 2, 2015.

Parametrix. Technical Memorandum – Former Chevron Property – Long Term Groundwater Monitoring Event 6. January 4, 2016.

Parametrix. Technical Memorandum – Former Chevron Property – Long Term Groundwater Monitoring Event 7. March 22, 2016.

Parametrix. Technical Memorandum – Former Chevron Property – Long Term Groundwater Monitoring Event 8. October 26, 2016.

Parametrix. Technical Memorandum – Former Chevron Property – Long Term Groundwater Monitoring Event 9. November 8, 2017.

Parametrix. Analytical Data – Former Chevron Property – Long Term Groundwater Monitoring Events 10 and 11. November 6, 2019.

Parametrix. Technical Memorandum – Former Chevron Property – Long Term Groundwater Monitoring Event 12. January 4, 2021.

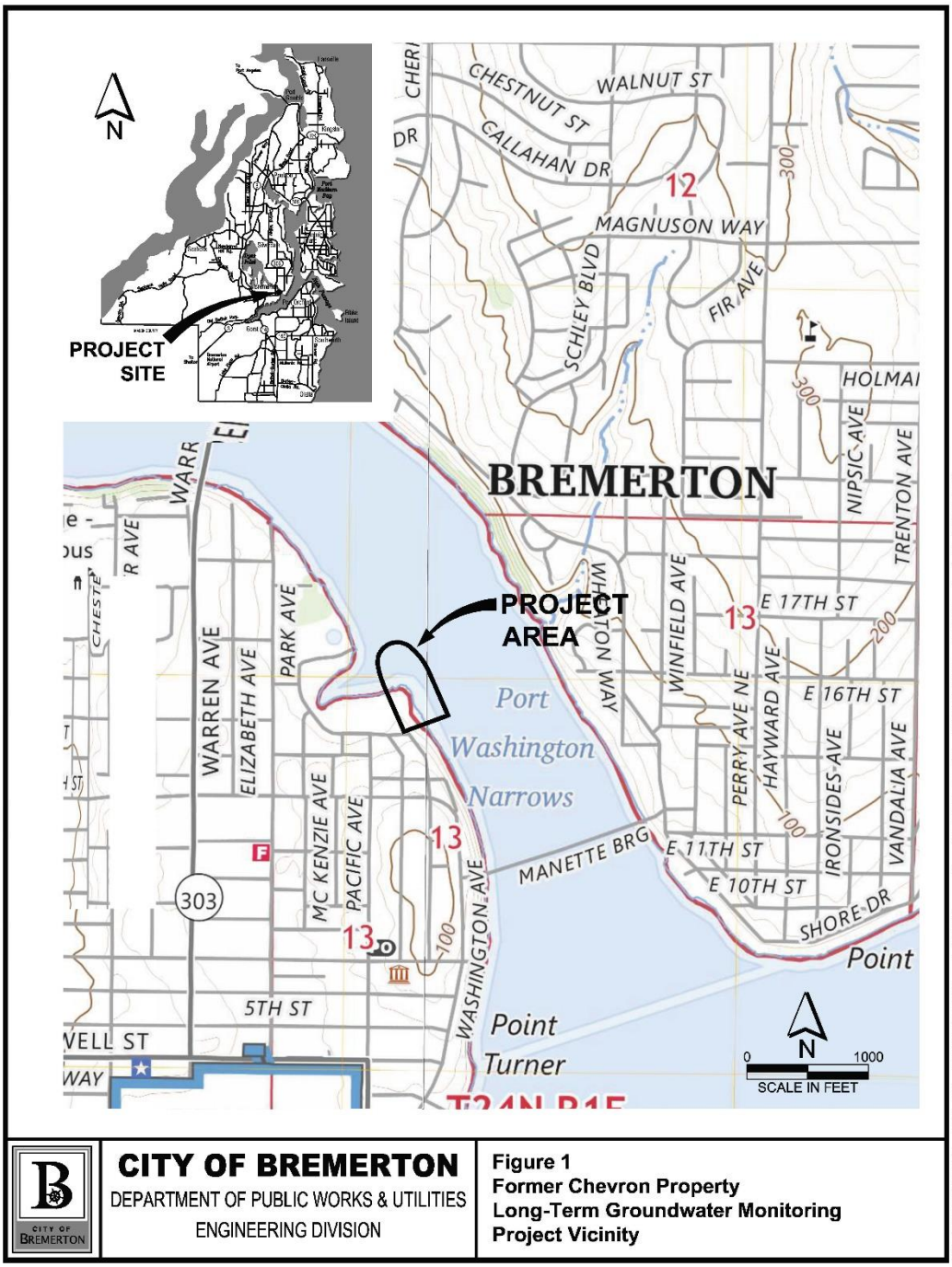
Parametrix. Technical Memorandum – Former Chevron Property - Long Term Groundwater Monitoring Event 13. November 22, 2021.

Parametrix. Technical Memorandum – Former Chevron Property – Long Term Groundwater Monitoring Event 14. May 30, 2023.

Parametrix. Technical Memorandum – Former Chevron Tank Farm Property – Long Term Monitoring Event 15. November 29, 2023.

Parametrix. Technical Memorandum – Former Chevron Tank Farm Property – Long Term Monitoring Event 16. January 31, 2025.

Appendix A. Vicinity Map



CITY OF BREMERTON
DEPARTMENT OF PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

Figure 1
Former Chevron Property
Long-Term Groundwater Monitoring
Project Vicinity

Appendix B. Site Plan

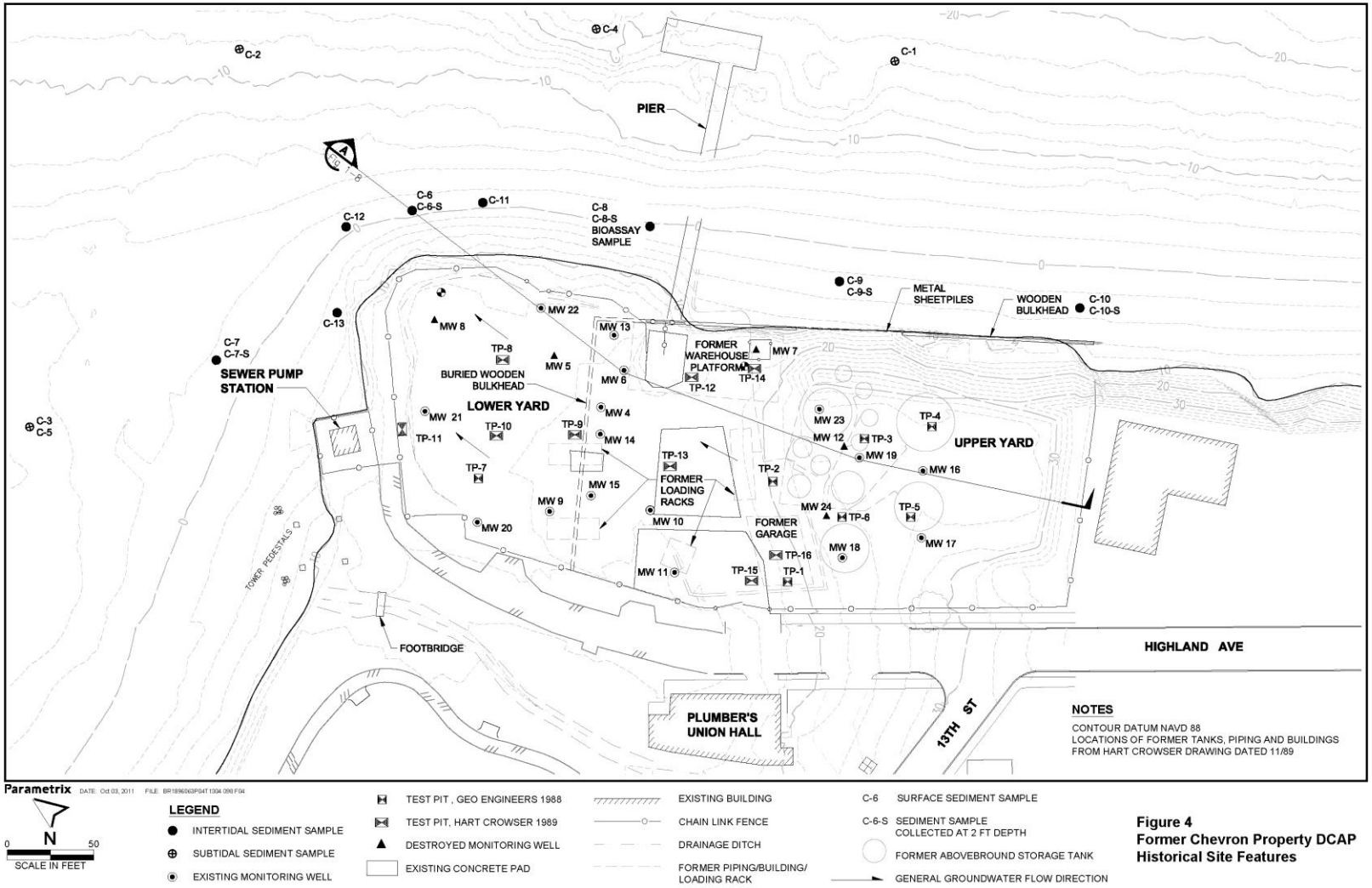


Figure 4
Former Chevron Property DCAP
Historical Site Features

Appendix C. Photo Log

Photo 1: Taken at the southeast corner of the park looking northwest.

Photo 2: Taken from the northwest corner of the site looking east.

Photo 3: Taken from the north looking south.

Photo 4: Taken from the southwest looking east.

Appendix D. SHARP

Chevron Tank Farm - Port Washington Narrows

Site Hazard Assessment and Ranking Process (SHARP) Report

Go to site contamination history

Location and land use info		Ecology Info	
1310 Highland Avenue, Bremerton, Kitsap County, 98337		CSID	285
		FSID	2618
Land use	recreational	VCP	none
Responsible unit	HQ	ERTS	none
Cleanup milestone	periodic review	UST ID	none
Parcel numbers	3709 - 001 - 003 - 0102	LUST ID	none

SHARP Results

Assessed by	Christopher Maurer
SHARP Date	08/27/2026
Environmental justice concerns?	EJFlag - No Override
EJ confidence level	high

SHARP Rating: Medium

Site Points: 420

SHARP Media	Scores	Confidence	Additional Factors	
Indoor air	D4	high	multiple chemical types	no
Groundwater	C3	high	risk to off-site people	no
Surface water	B3	low	climate change impacts	yes
Sediment	B1	medium	plant/animal tissue data	no
Soil	C1	high		

Media score = exposure and severity. Exposure score: A to D, A=current exposure. Severity score, 1 is the most severe. See https://ecology.wa.gov/SHARP for more information.

This section is blank if this is the first SHARP

Sources reviewed

2025 - Long Term Monitoring Event 16 - City of Bremerton
2012 - Chevron Tank Farm Final Public Participation Plan - Ecology
2012 - Chevron Tank Farm Draft Cleanup Action Plan - Parametrix
2011 - Former Chevron Property Remedial Investigation/Feasibility Study - Parametrix
2006 - Chevron Property Sediment Characterization Study - Parametrix

Primary census tract	Associated census tracts
53035080500	53035080300

Local demographics comments

no comments

Source/source area description

Soils in the upper yard consist of glacial till underlain by interbedded dense silts and silty sands (outwash). This soil unit was consolidated during the most recent glaciation and, as a result, is typically very dense and relatively impermeable. The lower yard is underlain by silty sand fill which was used to extend the lower yard into Port Washington Narrows. The fill is underlain by silty sand outwash at a depth of approximately 20 feet below ground surface. Groundwater occurs at the site at depths of approximately 4 to 10 feet below ground surface in the lower yard and 5 to 20 feet below ground surface in the upper yard.

Soil comments

A free product removal system was operated in 1989 by Chevron(details not available). Sampling in 2008 showed that the soil contamination was limited to three areas. An interim removal action in 2009 removed 1,200 cubic yards of contaminated soil which was taken off-property. An additional 4,000 cubic yards of contaminated soil was treated in-situ with a chemical oxidant. A 2011 feasibility study selected groundwater monitoring, natural attenuation of soils, and an Agreed Order/environmental covenant as future preferred cleanup actions.

Groundwater comments

Given the location of monitoring well 22R, which has exceedances of gasoline and benzene (October 2025), it is likely that the groundwater plume extends beyond the property line. Monitoring wells have not been installed beyond the property line. Since the exceedances are small, it is likely that the off-property plume is minor. A free product removal system was operated by Chevron in 1989 (report not available).

Surface water comments

No surface water studies have been done. Given the level of contamination (gasoline and benzene) currently found (2025) in monitoring well - 22R, it is unlikely that contamination from the site to surface water is occurring.

Sediment comments

A 2006 sediment analysis of five samples found exceedances of fluoranthene, chrysene, benzofluoranthenes, and heavy polycyclic aromatic hydrocarbons in one sample. Subsequent confirmatory bioassay found no significant statistical difference between the sample and a reference sample. Due to the presence of large cobbles, sediment samples were difficult to obtain. A 2007 Ecology analysis of four sediment samples found exceedances of bis 2-(ethylhexyl)phthalate and butylbenzylphthalate in one sample. Both exceedances were above the sediment management standards but below the site cleanup screening levels.

Indoor air comments

no comments

Additional factors comments

no comments

Site history

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The former Chevron property operated as a bulk fuel tank farm from 1946 to 1988. The facility was expanded to its present boundaries between 1946 and 1963 by placement of fill in the inter-tidal zone.

While operating as a commercial fueling facility, underground diesel and gasoline fuel piping lead to leaks and subsurface contamination. All of the aboveground structures were removed in 1988, when the contamination was discovered. Between 1990 and 1994, soil vapor extraction was used to reduce the contamination in the soil. In 2009, 1,200 cubic yards of contaminated soil were excavated and taken off-site. At the same time, chemicals were injected into the contaminated soil remaining on-site to speed the breakdown of the contamination. Additional injections were done in 2011. The site groundwater has been monitored regularly since 2013.

The City of Bremerton purchased the property in 2005. The City used the property to expand the adjacent Evergreen Rotary Park.

Overflow - Site contamination and cleanup history

No overflow

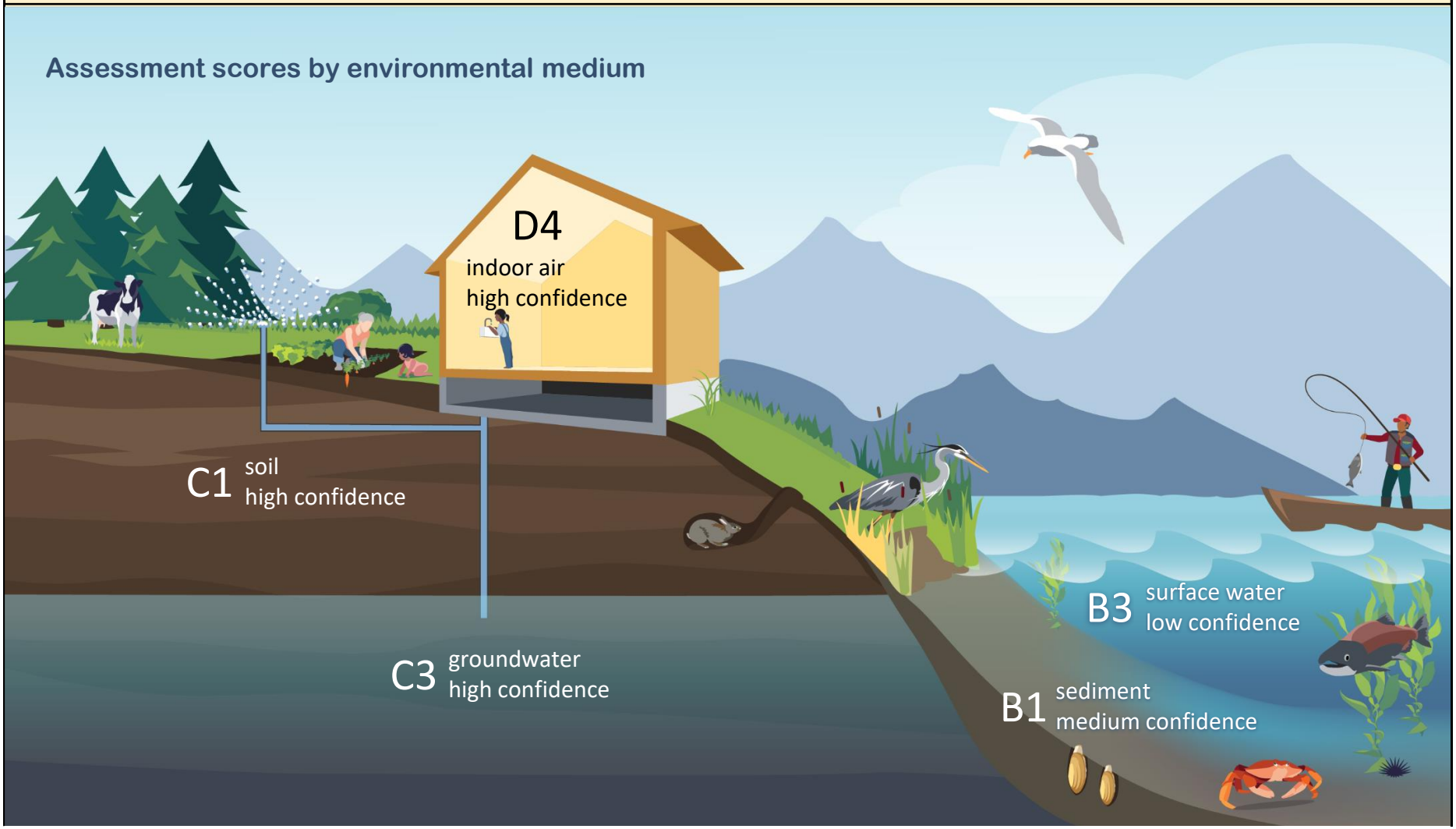
Chevron Tank Farm - Port Washington Narrows

SHARP Report — Part 2 of 2

285 Chevron Tank Farm - Port Washington Narrows 20260827

First SHARP

SHARP rating — Medium

Conceptual site model

08/27/2026