



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

**CERTIFIED MAIL**

May 3, 2006

Ms. Jean Johnson  
7309 96<sup>th</sup> Avenue SW  
Tacoma, WA 98498-3316

**Re: Further Action Determination under WAC 173-340-515(5) for the following  
Hazardous Waste Site:**

- Name: Brinnon General Store
- Address: 306413 U.S. Highway 101, Brinnon, WA
- Facility/Site No.: 96498799
- VCP No.: SW0759

Dear Ms. Johnson:

Thank you for submitting your independent remedial action reports for the Brinnon General Store facility (Site) for review by the State of Washington 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 whether further remedial action is necessary at the Site to meet the substantive requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC. 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 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 the Site:

1. UST Site Assessment Report, Brinnon Grocery, dated December 8, 1989 by Mickelson Construction Co., Inc.
2. Phase II Environmental Site Assessment Report, Brinnon Store Site, dated July 3, 2002 by Stemen Environmental, Inc.
3. Monitoring Well Installation and Groundwater Monitoring, Brinnon Store Site, dated July 16, 2002 by Stemen Environmental, Inc.
4. Monitoring Well Installation and Groundwater Monitoring, Brinnon Store Site, dated October 19, 2002 by Stemen Environmental, Inc.
5. Monitoring Well Installation and Groundwater Monitoring, Brinnon Store Site, dated September 26, 2004 by Stemen Environmental, Inc.
6. Monitoring Well Installation and Groundwater Monitoring, Brinnon Store Site, dated November 12, 2004 by Stemen Environmental, Inc.

The documents listed above will be kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. Appointments can be made by calling the SWRO resource contact at (360) 407-6365.

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

- Documented release of gasoline-range petroleum hydrocarbons and benzene, toluene, ethylbenzene, and xylene (BTEX) compounds in soil and groundwater.

The Site is more particularly described in Enclosure A to this letter, which includes a detailed Site diagram. The description of the Site is based solely on the information contained in the documents listed above.

Based on a review of the independent remedial action reports and supporting documentation listed above, **Ecology has determined that the independent remedial action(s) performed at the Site are not sufficient to meet the substantive requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing any of the contamination at the Site.** Therefore, pursuant to WAC 173-340-515(5), Ecology is issuing this opinion that **further remedial action is necessary at the Site under MTCA.**

Based on a review of the available information, Ecology has the following comments:

- The full extent of soil and groundwater contamination on site has yet to be defined. Ecology recommends installing additional monitoring wells on site in the area of the former excavation. Based on available information, groundwater occurs beneath the site at approximately 7 feet below ground surface (bgs). However, the monitoring wells that currently exist on site were screened from 10 to 20 feet bgs. If any light non-aqueous phase liquid (LNAPL) is present in groundwater as a result of the historic gasoline release, it will be at or near the water table and would not likely show up in a well screened 3 feet below the water table. Please install an adequate number of monitoring wells on site with the well screens set so as to bracket the water table (e.g., approximately 3 feet above and 7 feet below the water table).
- Soil and groundwater samples should be collected from all new well locations and should be analyzed for the constituents identified in MTCA Table 830-1 for Gasoline-Range Organics, including analyses for methyl tert-butyl ether (MTBE), 1,2-dibromoethane (EDB), 1,2-dichloroethane (EDC), and total lead, which doesn't appear to have been done to date. If contaminants of concern are detected in the monitoring wells, the installation of additional wells may be warranted.
- A drinking water sample should be collected from the on-site drinking water supply well and analyzed for the constituents identified in MTCA Table 830-1 for Gasoline-Range Organics.
- When comparing results to MTCA Method A cleanup levels, please be sure to use the correct cleanup level for Gasoline-Range Organics when benzene is present: 30 milligrams per kilogram (mg/kg) for soil, and 800 micrograms per liter ( $\mu\text{g/L}$ ) for groundwater.
- A water elevation survey should be conducted to support existing information regarding the direction of groundwater flow beneath the site.
- After proper characterization of the soil and groundwater, remedial action may be necessary. A Cleanup Action Plan should be developed pursuant to WAC 173-340-360 through 173-340-390, and submitted to Ecology for review and comment.
- Ecology requires that at least four rounds of quarterly groundwater sampling be conducted showing concentrations of contaminants below Method A MTCA cleanup levels to meet the substantive requirements of MTCA. The reason for this is to determine any seasonal variations in the contaminant concentrations, so that Ecology can determine whether the implemented remedy is permanent.

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- In accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements), data generated for Independent Remedial Actions shall be submitted in both a written and electronic format. For additional information regarding electronic format requirements, see the website <http://www.ecy.wa.gov/eim>. Please ensure that data generated during on site activities is submitted pursuant to this policy.

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.

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 performed at the Site meet those requirements.

If you have any questions regarding this opinion, please contact me at (360) 407-6347.

Sincerely,



Scott Rose  
SWRO Toxics Cleanup Program

SR: [SECRETARY INITIALS]

Enclosures: Site Summary, 2 Site Diagrams

Cc: Paul Stemen, Stemen Environmental, Inc.  
Carol Johnston, Ecology  
Bob Warren, Ecology  
Chuck Cline, Ecology  
Trish Akana, Ecology (SW0759)

## **Enclosure A**

### **Site Description**

The Brinnon General Store site is located at 306413 U.S. Highway 101 in Brinnon, Jefferson County, Washington (WA). The 2.1-acre site is located in an area of light commercial and rural residential properties. The site currently consists of a combination convenience store/self service vehicle fueling station, a manufactured home, and two storage sheds. The convenience store building is an approximately 3,000-square-foot rectangular-shaped structure. Two 8,000-gallon dual compartment (5,000/3,000) coated steel underground storage tanks (USTs) are located on site. Three of the tank compartments are used for the storage of various grades of unleaded gasoline, while the other compartment is used for the storage of diesel fuel. The USTs are serviced by submersible pumps and remote fuel dispensers. The fuel dispensing/pump island is located directly west of the convenience store, and the USTs are located directly north of the pump island.

In 1989, three 1,000-gallon USTs containing leaded and unleaded gasoline were excavated and removed from the site by Mickelson Construction of Olympia, WA. A limited amount of information is available regarding the UST removal activities. It is known that a confirmed release of gasoline to soil and groundwater on site had taken place, and that an unknown quantity of gasoline-impacted soil was excavated and stockpiled on a vacant parcel located directly west of the site, across Highway 101. This parcel is also owned by the site owner. Based on available information, all accessible petroleum-impacted soils were allegedly excavated and removed from the UST excavation area.

It is believed that an unknown quantity of soil was left in place along the southern perimeter of the excavation. Any further excavation in this area could have had adverse impacts on the structural integrity of the convenience store building. However, the building did suffer some structural damage, due to settling, along the northern perimeter of the structure after completion of UST removal activities.

Soils beneath the site to a depth of approximately 12 feet below ground surface (bgs) consist of sandy gravels. Groundwater was encountered at approximately 7 feet bgs, and the direction of groundwater flow is presumed to be to the east toward Puget Sound.

### **Soil and Groundwater Contamination**

In April 2002, seven discrete soil samples and five discrete groundwater samples were collected from locations throughout the site. The soil samples were collected from depths ranging from 6 to 12 feet bgs. In addition, six composite soil samples and one discrete groundwater sample were collected from the parcel west of the site where the excavated soils were stockpiled and graded. The composite soil samples were collected from depths ranging from 9 to 36 inches bgs. All samples were submitted for laboratory analysis for gasoline-range petroleum hydrocarbons (TPH-G) by Ecology Method NWTPH-Gx and for benzene, toluene, ethylbenzene, and xylene (BTEX) compounds by EPA Method 8021B.

Analytical results of the discrete soil samples indicated the presence of TPH-G, benzene, ethylbenzene, and xylenes at concentrations in excess of their respective Model Toxics Control Act (MTCA) Method A

cleanup levels of 30 milligrams per kilogram (mg/kg), 0.03 mg/kg, 6 mg/kg, and 9 mg/kg. Concentrations of TPH-G ranged from 32 mg/kg to 530 mg/kg; benzene ranged from 1.6 mg/kg to 3 mg/kg; and ethylbenzene and xylenes were detected at 6.3 mg/kg and 38 mg/kg, respectively. The highest concentrations were detected at locations S-1 and S-2, which are located downgradient of the former excavation.

Analytical results of the groundwater samples indicated the presence of TPH-G and benzene in excess of their respective MTCA Method A cleanup levels of 800 micrograms per liter ( $\mu\text{g/L}$ ) and 5  $\mu\text{g/L}$ . The exceedances occurred in S-1 [TPH-G (1,700  $\mu\text{g/L}$ ) and benzene (22  $\mu\text{g/L}$ )] and S-2 [TPH-G (12,000  $\mu\text{g/L}$ ) and benzene (66  $\mu\text{g/L}$ )].

No contaminants were detected in the composite soil samples or discrete groundwater sample collected from the soil stockpile area above laboratory detection limits. In June 2002, five permanent monitoring wells (MW-1 through MW-5) were installed throughout the site. The wells were screened from 10 to 20 feet bgs, except for MW-1, which was screened from 4.5 to 14.5 feet bgs. The depth to groundwater in the wells ranged from 6.29 feet bgs in MW-1 to 8.0 feet bgs in MW-2. Groundwater samples were collected from MW-1 through MW-4 using disposable polyvinyl chloride (PVC) bailers and submitted for laboratory analysis for TPH-G by Ecology Method NWTPH-Gx and BTEX compounds by EPA Method 8021B. MW-5 could not be sampled due to a parked vehicle restricting access.

Analytical results did not detect the presence of any contaminants above laboratory detection limits. *It should be noted that due to the installation of the well screens below the water table in four out of five of the wells, any light non-aqueous phase liquid (LNAPL) floating near the surface of the water table is not likely to show up in these wells.*

The monitoring wells, including MW-5, were sampled again in September 2002, September 2004, and November 2004, and submitted for analysis for the constituents analyzed for previously. For all rounds of sampling, no contaminants were detected in the groundwater samples above laboratory detection limits.

### **Cleanup Activities**

As stated above, little is known regarding the details of the 1989 UST removal and associated confirmational sampling activities. Based on available information, it appears that an estimated 1,800 cubic yards of soil was excavated during removal of the USTs. Miscellaneous confirmational soil samples collected around the excavation area indicated concentrations of total petroleum hydrocarbons (TPHs) and BTEX compounds in excess of MTCA cleanup levels.

As a result, it is presumed that petroleum-impacted soils still exist on site. In addition, petroleum-impacted soils likely exist beneath the convenience store building.