

# ENVIRONMENTAL Fact Sheet



## Harbor Island Superfund Site, Seattle, Washington

U.S. Environmental Protection Agency, Region 10

July 2008

*The U.S. Environmental Protection Agency (EPA) and our partners are continuing the cleanup of the Harbor Island Superfund site, including a renewed focus on the East Waterway.*

### East Waterway Study Progresses

EPA has launched a comprehensive study of the East Waterway of the Harbor Island Superfund site in Seattle's Elliott Bay. The Port of Seattle is leading the work under a legal agreement with EPA. The City of Seattle and King County are supporting the Port's efforts.

The purpose of the study is to learn about the contaminated sediment (mud), including the following:

- Chemicals of concern in the sediment.
- Extent of the chemical contamination.
- Sources of the contamination.
- Risks that exposure to the sediment may pose to people and the environment.

Work will include sampling in areas not studied before. The study will also include research on cleanup methods for the entire East Waterway.

### Study Will Lead to Cleanup Decision

EPA's goal is to use the information from the study to make a cleanup decision for the East Waterway. This waterway is the last area of the Harbor Island Superfund site where a final cleanup decision has not been made.

EPA expects sediment and other sampling to begin later this year and extend into 2009. Information from the sampling will be used to determine what risk the contamination in the waterway may pose to people and to marine life living in the sediment. We expect to make a final cleanup decision by early 2011.

### Study Builds on Earlier Work

The Port has already done some cleanup work in the East Waterway. That work included studies of the waterway and a "hot spot" cleanup in 2005, overseen by EPA. At that time, the Port removed over 200,000 cubic yards of material contaminated with chemicals, including polychlorinated biphenyls (PCBs), metals, and pesticides. To protect marine life in the sediment, the Port placed a layer of sand over remaining sediment contaminated at levels higher than allowed by State of Washington standards. The Port samples the sand yearly to check for recontamination.

In 2008, the Port's contractors removed another 39,000 cubic yards of material to allow ships to move through the East Waterway. This material was disposed of in an "open water disposal" area in Elliott Bay. Another 20,000 cubic yards will be removed and disposed of in a landfill. The work was authorized by the multi-agency Dredged Material Management Program. EPA is overseeing all this work.



*EPA and our partners are continuing the cleanup of the approximately 400-acre Harbor Island site, including the East Waterway.*

## Shipyard Cleanups Benefit Puget Sound

Cleanups completed at Todd Shipyard in 2006 and at the former Lockheed Shipyard in 2005 continue to protect people and the environment. These cleanups are a significant contribution to EPA's efforts to remove toxics from Elliott Bay and Puget Sound. EPA oversaw these two cleanups, which removed a total of 330,000 cubic yards of contaminated sediment and 7,800 creosote-contaminated pilings. These cleanups also created over five acres of fish-friendly habitat along the western shore of Harbor Island.

In addition, Todd Shipyard completed a study to better define the extent of petroleum contamination on their property. Extraction wells began removing petroleum contamination in 1998, and new wells were installed in 2005. EPA is now working with Todd to maximize the extraction system so that goals for their petroleum cleanup will continue to be met.

## Cleanup of Tank Farms Is Mostly Complete

There are also three bulk-storage facilities for petroleum, called "tank farms," on Harbor Island. They are owned by Shell (formerly Equilon), Kinder Morgan (formerly GATX), and BP-Arco. The Washington State Department of Ecology (Ecology) oversees the cleanup of the tank farms, which includes this work:

- Removing accessible soil contaminated with petroleum and metals above cleanup standards.
- Building and operating systems to treat petroleum-contaminated soil and groundwater on site.
- Monitoring cleanup that occurs through natural processes.
- Conducting long-term groundwater monitoring.
- Restricting site use with covenants.

The facility owners have completed most of this work and are making progress on the rest.

A total of 52,500 tons of soil contaminated with petroleum or lead and arsenic was removed from the tank farms and disposed of appropriately off site. Two of five systems to treat soil and groundwater ceased operation after achieving cleanup goals. Two more systems continue to operate, and a fifth system will

begin operating in coming weeks. The largest of these systems is near the bulkhead in the BP-Arco facility and prevents the release of petroleum contamination to surface water. Investigations are planned for two separate areas to determine possible sources where contaminant levels in groundwater are not decreasing through naturally occurring processes.

## Groundwater Monitoring Continues Across Harbor Island

About ten years of quarterly groundwater monitoring has been completed in 130 wells throughout the petroleum tank farms. Based on the monitoring data, Ecology has reduced the required frequency and the number of chemicals being sampled.

In addition, two years of groundwater monitoring has been completed for other parts of the Harbor Island site. In a small number of wells, a few chemicals are being found at levels above the cleanup goals.

Ecology and EPA will continue to monitor groundwater across the site to ensure that chemical contamination continues to decline and does not contaminate surface water.

## Reviews Ensure Cleanups Remain Effective

EPA reviews the entire Harbor Island cleanup every five years to ensure that it is effective and protects people and the environment. "Five-year reviews" are required at Superfund sites where contamination remaining in place restricts use of the site. EPA and Ecology completed the second review at Harbor Island in 2005. The next five-year review is scheduled for 2010.

During the 2005 review, EPA and Ecology carefully evaluated the East and West Waterways, the Todd and Lockheed sediment, the petroleum tank farms, soil, and groundwater. The review confirmed that the cleanup decisions are still protective.

Key findings, including follow-up actions, are described in detail in the five-year review report. It is available at EPA and on the EPA website.

## Background

Harbor Island is an approximately 400-acre industrial island located at the mouth of the Duwamish River on the southern edge of Elliott Bay, in Seattle, Washington. The island was constructed around 1905 from sediment dredged from the Duwamish River to create the East and West Waterways and the navigational channel of the Lower Duwamish Waterway.

The island has been used for cargo handling, as well as shipbuilding, lead smelting, and other industrial work. In addition, the island is the terminus of a major Northwest oil pipeline and a key distribution point for petroleum.

Harbor Island was placed on EPA's National Priorities (Superfund) List in 1983 due to contamination from a lead smelter, as well as releases of hazardous substances from other industrial activities on Harbor Island.

Under a 1994 agreement, EPA designated Ecology as the lead agency for cleanup of the tank farms because cleanup of petroleum, the main contaminant in this area,

is regulated by state law, instead of by federal Superfund regulations.

The cleanup of the Harbor Island site has also included removing a large amount of soil and a number of underground storage tanks from the upland area, which was then capped with asphalt.

## Need More Information?

Detailed information about the East and West Waterways, Todd and Lockheed Shipyards sediment cleanups and the entire Harbor Island site is available at the following location:

U.S. EPA Region 10  
Superfund Records Center  
1200 Sixth Avenue, Suite 900  
Seattle, Washington 98101-3140  
Please call (206) 553-4494 for an appointment.

Some Harbor Island site documents are available on the EPA Region 10 web site:  
[www.epa.gov/r10earth/](http://www.epa.gov/r10earth/) Click on "Index," then "H," and then "Harbor Island Lead."

## Questions?

If you have questions about the Harbor Island cleanup, please contact one of the following:

### General Information

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*For people with disabilities: please call Cindy Schuster to request reasonable accommodation.  
For TTY users: please call 1-800-977-8339 and give the operator Cindy Schuster's phone number.*



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