

ARCO Bulk Fuel Storage Facility – Harbor Island



Engineering design report available for public review and comment

The Washington State Department of Ecology (Ecology) has prepared this fact sheet pursuant to the Model Toxics Control Act Chapter 70.105D to provide you with information about the Engineering Design Report that has been prepared for the ARCO Bulk Fuel Storage Facility site.

You are welcome and encouraged to comment on the Engineering Design Report through July 31, 2000.

The cleanup process

Last spring, Ecology approved the site's Consent Decree and Cleanup Action Plan. These documents set the wheels in motion for the Engineering Design Report.

Specifically, the Consent Decree is the legal agreement between ARCO and Ecology to ensure the cleanup meets the requirements of the Model Toxics Control Act (the state's cleanup law). The Cleanup Action Plan, which was based on the 1997 Remedial Investigation and Feasibility Study, describes the cleanup chosen for the site.

The Engineering Design Report describes the engineering concepts and design criteria for the cleanup.

Site background

The ARCO Bulk Fuel Storage Facility, also known as the ARCO Tank Farm, is an industrial site located at 1652 SW Lander Street on Harbor Island in Seattle, King County. The facility, which consists of Terminal Plant 1 and Terminal Plant 2, was constructed in the 1930s and has been in operation under a variety of owners since that time. ARCO assumed operation of the facility in the 1940s and '50s.

Harbor Island itself is a Superfund site and is on the Environmental Protection Agency's National Priorities List. The ARCO cleanup, although located on Harbor Island, was delegated to the state and was ranked under the state process. It is currently ranked a "2" on the state's Hazardous Sites List (a rank of "1" is the highest assessed risk and "5" is the lowest).

Site contamination

ARCO's soil and ground water are contaminated with petroleum product as a result of leaks and spills from underground and above ground storage tanks, piping, and an oil/water separator.

Of primary concern to Ecology are the areas beneath an inaccessible shoreline warehouse adjacent to the West Waterway and the inland accessible areas of Plant 1. Approximately 2,300 gallons of weathered diesel and

June/July 2000

Public Comment Period for Engineering Design Report

June 30 through July 31, 2000

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gasoline are estimated to be trapped behind the shoreline bulkhead-seawall structures that form a partial barrier to ground water flow to the West Waterway. Fortunately, an interim remediation system was installed that removes floating petroleum product and associated dissolved hydrocarbons. To date, 11,700 gallons have been recovered.

The soils in these areas are contaminated with total petroleum hydrocarbons (TPH) and could pose a potential source of contamination to the ground water.

Another area of major concern is the accessible inland subsurface soils in Plant 2, located in the middle of the island, that are contaminated with TPH.

Additionally, since March 2000 when the Cleanup Action Plan was finalized, an additional area of petroleum product was detected east of Plant 2, along 11th Ave SW. (*Section 2.8 and 3 of the Engineering Design Report contains an outline of the investigation and cleanup schedule for this new discovery.*)

Soil cleanup

The actions for cleaning up TPH-contaminated soils include excavating accessible hot spots (contamination that is above 10,000 parts per million) located inland of Plant 1. This level is based on EPA's Record of Decision for Harbor Island.

The inaccessible TPH-contaminated soil hot spots beneath the shoreline warehouse in the unsaturated zone will be treated using *soil vapor extraction (SVE) and natural bioremediation*. SVE systems are designed to remove contaminants that have a tendency to evaporate easily. How the SVE system works is by

applying a vacuum through a system of underground wells, contaminants are pulled to the surface as vapor or gas. The SVE will also maintain elevated oxygen concentrations within the unsaturated zone, which will enhance the on-going destruction of TPH by natural biodegradation processes.

TPH-contaminated soils located inland of Plant 2 that are above 20,000 parts per million will be excavated (this level is based on EPA's guidance for natural attenuation).

The remaining residual TPH-contaminated soils will be treated with bioremediation. **Bioremediation** is a treatment technology that uses microorganisms, such as bacteria that live in the soil, to break down contaminants into harmless substances.

Ground water cleanup

The TPH-contaminated ground water will be treated using *air sparging*. Air sparging means pumping air into the saturated zone of the soil to help flush (bubble) the contaminants up into the unsaturated zone where the SVE extraction wells can remove the contaminants.

The ground water will also be monitored long-term to ensure the cleanup objectives are met.

The Engineering Design Report

The following is a summarized list of what's contained in the Engineering Design Report:

- Additional site data collected since the Remedial Investigation and Cleanup Action Plan were finalized.
- The construction, excavation, and operation and maintenance schedule for the cleanup actions at the site.

- A summary of the contents of the final construction plans and specifications.
- The design features to control spills and accidental discharges from the cleanup action construction, excavation, and operation and maintenance activities.
- The safety features that have been designed into the cleanup action for worker protection and protection of the environment.
- The waste management procedures for waste streams that will be generated during construction, excavation, and operation and maintenance.
- The testing and quality control procedures that will be implemented during construction activities.
- The compliance monitoring activities that will be implemented.

Your comments

Should you have comments after reading the Engineering Design Report, please send them to Ecology's Site Manager, Nnamdi Madakor, Department of Ecology, 3190 160th Ave SE, Bellevue WA 98008-5452.

After the public comment period, Ecology will review the comments received and will make recommendations for any suggested changes to the Engineering Design Report. If no significant changes are made, the report is considered final and construction work will begin.