PUBLIC PARTICIPATION PLAN

DUWAMISH SHIPYARD, INC.
SEATTLE, WASHINGTON

Prepared by
Washington State Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008-5452

July 2009

Table of Contents

Introduction

The Washington State Department of Ecology (Ecology) developed this public participation plan according to the Model Toxics Control Act (MTCA). This plan is designed to promote meaningful community involvement during the investigation and cleanup of the Duwamish Shipyard, Inc. site located in Seattle, Washington. This plan outlines and describes the tools Ecology will use to inform the public about site cleanup activities, and it describes how the community can become involved in this process.

Ecology and the potentially liable person (PLP), Duwamish Shipyard, Inc., negotiated a legal agreement called an Agreed Order that formally describes their working relationship. Under the Agreed Order, the PLPs will complete a Remedial Investigation and Feasibility Study for the site. The Remedial Investigation/Feasibility Study is required under WAC 173-340-350 and is part of the cleanup action work for the site. The Remedial Investigation will determine the nature and extent of contamination in the upland area, bank, and sediment areas of the site. The Feasibility Study will evaluate the cleanup alternatives for the site.

Cleanup actions might be identified during this RI or FS process that will eliminate or minimize current releases of contamination to the Lower Duwamish Waterway (LDW) or actions that are necessary to prevent an imminent threat to human health or the environment. Ecology will consider implementing such cleanup actions as interim actions under the existing Agreed Order.

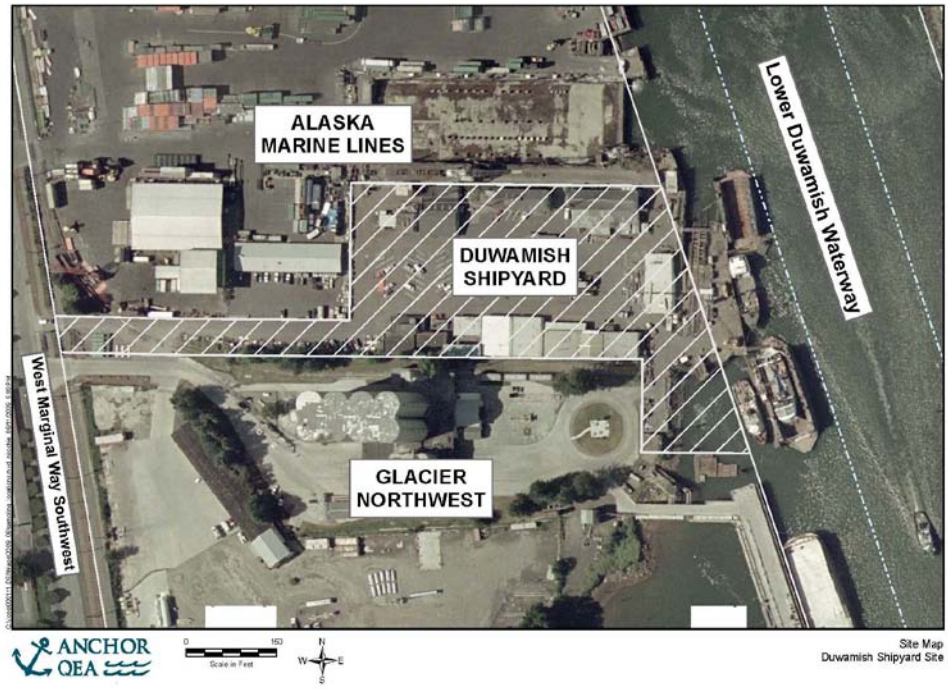
Project Description

Location

This site is located at 5658 West Marginal Way Southwest in Seattle, Washington on the west bank of the Lower Duwamish Waterway (See Site Map on page 5). The site is bordered to the north by Alaska Marine Lines, on the south by Glacier Northwest, Inc., on the west by West Marginal Way Southwest, and on the east by the Lower Duwamish Waterway.

Site Background

The Duwamish Shipyard, Inc. property is about five acres located in an industrial zoned area. Shipyard operations began in 1941 after the property was purchased from King County. Duwamish Shipyard, Inc. focused on repair and maintenance of floating vessels such as tug boats, barges, dredges, fishing vessels, small passenger vessels, and other types of commercial vessels and equipment. Marine repair services included machine and electrical work, carpentry, steel fabrication, pipe-fitting, sandblasting, pressure washing, and painting. Shipyard operations included the use of two dry-docks and a graving dock formerly leased from General Construction Company (former owner of the Alaska Marine Lines property) and Alaska Marine Lines. Alaska Marine Lines filled in the graving dock to expand their freight terminal operations. In early 2007 Duwamish Shipyard, Inc. sold the dry-docks and ceased active shipyard operations. Although shipyard operations ended in 2007, the site is currently owned by Duwamish Shipyard, Inc. Currently the site is leased by Alaska Marine Lines for container storage and truck access. Duwamish Shipyard, Inc. is marketing the property for industrial use.



Contaminants of Concern

Contamination at this site is likely a result of shipyard operations. Soil, groundwater, stormwater, and sediments are contaminated. The contaminants of concern in the soil are:

- Total Petroleum Hydrocarbons (TPH)
- Polynuclear aromatic hydrocarbons (PAHs)
- Semi-volatile organic compounds (SVOCs)
- Volatile organic compounds (VOCs)
- Metals (arsenic, cadmium, copper, lead, and zinc)

The contaminants of concern in the groundwater are:

- Total Petroleum Hydrocarbons (TPH)
- Polynuclear aromatic hydrocarbons (PAHs)
- Volatile organic compounds (VOCs)
- Metals (arsenic, chromium, and lead)

The contaminants of concern in the stormwater are:

- Copper and zinc

The contaminants of concern to storm water solids are:

- Polynuclear aromatic hydrocarbons (PAHs)
- Semi-volatile organic compounds (SVOCs)
- Tributyltin (TBT)
- Metals (copper, mercury, and zinc)

The contaminants of concern in sediments in the adjacent Lower Duwamish Waterway are:

- Polynuclear aromatic hydrocarbons (PAHs)
- Semi-volatile organic compounds (SVOCs)
- Dioxins and Furans
- Metals (arsenic, copper, lead, and zinc)

Previous Cleanup Work

The property has been the subject of several environmental investigations and cleanups beginning in the early 1990s. These investigations and cleanups are summarized in the following reports:

- *Preliminary Investigation Data Report, Duwamish Shipyard, Inc. (Site # 1429)* (Anchor Environmental 2006)
- *Lower Duwamish Waterway Glacier Bay Source Control Area Summary of Existing Information and Identification of Data Gaps Report* (SAIC, 2007)

Detailed information on individual investigations and cleanups are available in the references listed in the reports noted above.

In 2007, Duwamish Shipyard, Inc. cleaned out the stormwater drainage system in response to a request from Ecology. In the solids collected from the stormwater drainage system, there were concentrations of the following contaminants above sediment management standards:

- Polynuclear aromatic hydrocarbons (PAHs)
- Semi-volatile organic compounds (SVOCs)
- Metals (copper, mercury, and zinc)

Current Activity

The proposed actions under the Agreed Order include the following:

- Review and summarize site history and existing environmental data.
- Identify data gaps.
- Investigate the site and fill data gaps.
- Analyze potential pathways of ongoing contamination, if any, to the Lower Duwamish Waterway sediments.

- Analyze feasible alternatives for source control and overall site cleanup.
- Conduct interim actions, if needed, to control current releases of contaminants, to the Lower Duwamish Waterway.

Lower Duwamish Waterway (LDW) Site Cleanup

The Duwamish Shipyard, Inc. site is located adjacent to the Lower Duwamish Waterway (LDW) site and within the LDW source control study area. The LDW site is a Superfund site that consists of the 5.5 mile stretch of the Duwamish River that flows north into Elliot Bay at the south end of Harbor Island. The LDW site is designated as a contaminated site under both state and federal law due to contaminants in the river and intertidal sediments. The Duwamish Shipyard, Inc. site is one of several sites near the LDW that will be cleaned up to reduce the threat to human health and the environment from releases of hazardous substances, and to assist in preventing recontamination of the sediments after the LDW site cleanup is complete.

The sediments in the LDW site contain a wide range of contaminants due to years of industrial activity and runoff from urban areas. Ecology and EPA are working together to clean up contaminated sediments in the LDW site and to control sources of recontamination from nearby areas.

In 2000, EPA and Ecology entered into an Administrative Order on Consent with King County, the Port of Seattle, the City of Seattle, and The Boeing Company. This legal agreement requires these four parties perform a Remedial Investigation (RI) and Feasibility Study (FS) of sediment contamination in the waterway. Information about the RI/FS for the LDW site is located at:
http://yosemite.epa.gov/r10/cleanup.nsf/sites/lduwamish

EPA is leading the RI/FS work, and Ecology is leading source tracing and control efforts. The source control efforts will prevent recontamination of the waterway after cleanup. Source control is the process of finding and then stopping or reducing releases of

pollution to the river from various sources such as direct discharges via piped outfalls, bank erosion from adjacent properties, surface runoff from adjacent properties, groundwater discharge, air deposition, and spills. It includes identifying and managing sources of contamination to waterway sediments in coordination with sediment cleanups.

Ecology is coordinating these source control efforts with the City of Seattle, King County, the Port of Seattle, the City of Tukwila, and EPA. Ecology partners with these other agencies through the Source Control Work Group. Their work includes a business inspection program; monitoring sediments from storm drain systems; permitting to prevent direct discharges to the waterway; contaminated site cleanups; and testing various household products/materials to determine if they contain chemicals found in waterway sediments.

As part of these source control efforts, Ecology is developing Source Control Action Plans (SCAPs) for the 24 subbasins (or source control areas) that drain to the LDW site. The SCAPS identify potential contamination sources and the actions needed to keep sediments from being contaminated again after cleanup occurs. In addition, the SCAPs describe source control actions that are planned or currently underway, and sampling and monitoring activities that will be conducted to identify additional sources.

A SCAP has been completed for the source control area where the Duwamish Shipyard Inc. site is located and is known as the RM 1.3-1.6 West (Glacier Bay) Source Control Area. The SCAP was based on a thorough review of information pertinent to sediment recontamination in this source control area. This SCAP is located on Ecology's website:

http://www.ecy.wa.gov/programs/tcp/sites/lower_duwamish/sites/glacier_bay/glacier_bay.htm

The Duwamish River Cleanup Coalition

The Duwamish River Cleanup Coalition (DRCC) is an advisory group to EPA and Ecology and works with the South Park and Georgetown neighborhoods and other stakeholders to ensure a Duwamish River cleanup that is accepted by and benefits the community and is also protective of aquatic life, wildlife and human health.

DRCC was formed by an alliance of community, environmental, tribal, and small business groups affected by ongoing pollution and cleanup plans for the LDW. The coalition members include: Community Coalition for Environmental Justice, the Duwamish Tribe, The Green-Duwamish Watershed Alliance, I'M A PAL Foundation, Environmental Coalition of South Seattle, Georgetown Community Council, People For Puget Sound, Puget Soundkeeper Alliance, South Park Neighborhood Association, Washington Toxics Coalition, and Waste Action Project.

DRCC is a formal "community advisory group" recognized by EPA and representing the interests of the community toward the cleanup work along the LDW. DRCC receives public participation grant funding from Ecology. They also receive technical assistance grants from EPA for technical advisors to review all LDW Superfund cleanup related studies and plans. They are involved in many aspects of the proposed Superfund cleanup and related MTCA cleanups. DRCC is working with Ecology to ensure that the cleanup and source control measures meet community standards.

Enhanced Public Participation

Ecology will work with EPA and stakeholders according to the enhanced public participation efforts that occur for the LDW Superfund site. Ecology site managers and community involvement coordinators may participate in community meetings and events as needed. Ecology will coordinate with the DRCC throughout the public involvement process. This may include such activities as coordination for public meetings and sharing drafts of documents with DRCC for review, as appropriate.

Community Profile

For decades much of the land along to the Lower Duwamish Waterway has been industrialized. Current commercial and industrial operations include cargo handling and storage, marine construction, boat manufacturing, marina operations, concrete manufacturing, paper and metals fabrication, food processing, and airplane parts manufacturing.

Although the Lower Duwamish Waterway is viewed primarily as an industrial corridor, two residential neighborhoods border the banks of the river: South Park and Georgetown. The South Park neighborhood is on the western shore of the Lower Duwamish Waterway, and the Georgetown neighborhood is on the eastern side of the Duwamish Waterway. The residents of the community are well known for their commitment to neighborhood issues particularly related to the ongoing site cleanups along the Lower Duwamish Waterway. A description of these communities is provided below.

South Park Community Description

The South Park neighborhood is located in South Seattle, on the west bank of the Lower Duwamish Waterway. Native Americans of the Duwamish Tribe were the first residents of South Park who lived on the shores of the Duwamish River for thousands of years. This area was once a small farming town composed of Italian and Japanese farmers who supplied fresh produce to Seattle's Pike Place Market. South Park became part of the City of Seattle in 1907. By 1920 the Duwamish River was straightened out into a straight, deep channel that would accept ocean-going ships and barges. This change in the Duwamish greatly impacted South Park. The curving meanders had been straightened, which made it easier for industry to develop along the banks of the waterway.

In the mid 1960s, South Park was rezoned as industrial. Over 4,000 people complained and the City of Seattle changed the zoning to low-density residential. The City of Seattle built the South Park Community Center in 1989 which remains a vital resource within the community. The South Park Community Center offers a wide variety of free and low

cost programs and special events. Special events include free breakfasts and family events. The community center provides before and after-school programs and school break camps for students. They also offer adult classes ranging from yoga to technology to English classes. South Park is also served by the City-owned neighborhood center, managed by the South Park Neighborhood Association. The neighborhood center houses several non-profit and city services including the South Park Food Bank, City-sponsored South Park Action Agenda, and the Environmental Coalition of South Seattle.

The Seattle Public Library opened the new South Park branch at 8604 Eighth Avenue South (at Cloverdale Street) in September 2006. This new branch is 5,019 square feet and has the capacity to hold 18,700 books and materials (about one-third of the collection is Spanish-language, including bilingual children's materials and Spanish Language fiction and non-fiction). The library also has bilingual staff on hand to answer questions and to help patrons.

The South Park neighborhood is comprised of about 3,717 people of various ethnicities: 37% Hispanic, 34% white, 14% Asian, 7 % Black, 5% multiracial, 2% American Indian, 1% Native Hawaiian/Pacific Islander. The average age is 31 years old and the average income is $20,917 (based on records from 2005). A variety of retail and service businesses are located along 14th Avenue South. Data from the Seattle Office of Economic Development lists the primary categories of employment in South Park as wholesale trade, transportation and utilities; construction/resources; manufacturing; and services.

Georgetown Community Description

The Georgetown neighborhood is located in South Seattle, on the east side of the Lower Duwamish Waterway across the river from South Park. Georgetown is Seattle's oldest neighborhood, settled by Luther Collins in 1851. It was incorporated as the City of Georgetown from 1904-1910, and later annexed by the City of Seattle.

According to records from 2005, just over 1,100 people live in Georgetown. The largest local employers in Georgetown are in the arts, entertainment, and recreation industries. The Georgetown neighborhood is home to large employers such as The Boeing Company and King County International Airport.

The community is host to local events such as art walks, an annual Arts and Garden Tour. The neighborhood is home to historic buildings such as the Old Georgetown City Hall, the Georgetown Steam Plant. The South Seattle Community College has recently revitalized its Georgetown Campus and is home to the Puget Sound Industrial Excellence Center Apprenticeship and Education Center. The campus offers more than 25 apprenticeship programs including masonry, meat cutters, electricians, iron workers, and cosmetology. The neighborhood is also home to The Georgetown Community Council meets once a month and is very active in the community.

Key Community Concerns and Issues

Ecology and EPA conducted interviews with community members, environmental organizations, and community organizations in October 2002 for the Lower Duwamish Waterway Site Community Involvement Plan. The Duwamish Shipyard, Inc. site is located within the larger Lower Duwamish Waterway site. Ecology did an abbreviated version of community interviews in 2006 and determined that the concerns raised in 2002 were still pertinent. In 2008 Stakeholder groups provided comments to EPA and Ecology on the Lower Duwamish Waterway Remedial Investigation Draft Report developed for the Lower Duwamish Waterway Superfund Site. Although these comments are directed to the entire Superfund site, they are relevant for the Duwamish Shipyard, Inc. site because it is part of the larger Superfund site. The stakeholder comments indicated that their concerns have remained constant with the concerns outlined below.

There is clear interest in this cleanup process along the Lower Duwamish Waterway. The following is representative of significant concerns and issues expressed during the community interviews. Ecology will work to respond to community concerns through

the cleanup process and through coordination with EPA, other organizations, such as state and local health agencies, and the community advisory group that has been established for the site.

- **Health:** Stakeholders are concerned that living close to the Lower Duwamish Waterway could affect their health. They expressed concern about consumption of all bottomfish and parts of other fish, as well as contamination from chemicals, bacteria and viruses. There is concern about exposure to contaminated sediments through contact at public access parks, employment at industries on the waterway, restoration work, and other cleanup work. Some said that there should be limited access to the river if there is a health risk.

- **Wildlife:** Stakeholders expressed concern for fish and wildlife. Sea lions, salmon, bottomfish, crabs, mussels, clams, shrimp, opossums, squirrels, ducks and other birds were mentioned, as well as concern about the disappearance of herons and for herons on Kellogg Island in the Duwamish Waterway.

- **Domestic animals:** There is concern about dogs eating garbage from the river and horses being on a greenbelt above the river.

- **River and groundwater contamination:** There is concern that the river is dying and that it contains contaminants, including PCBs and mercury. There is concern about the effect of septic systems near the river; sewer overflows; surface water runoff, including oil, antifreeze and fertilizers; unreported spills and illegal dumping; and pumping of waste into the river or groundwater. There is concern that permits for discharges to the river are not being enforced or will be revised to be less strict. There is concern that sources of PCBs are not being addressed and that calculated cleanup levels for many contaminants will not be strict enough. There is also concern that the current efforts to control ongoing sources of pollution will not be enough to actually control the sources.

- **Economics:** Some people interviewed are concerned about contamination lowering property values. Others are concerned that businesses will leave the area due to the designation of the Lower Duwamish Waterway as a Superfund site.

- **Cleanup:** Some people are concerned that South Park and the businesses on the water will be affected by cleanup activities, such as increased truck or barge traffic and potential accidents. There are concerns about the costs of damages to natural resources and the possibility that parties responsible for contamination will do some early cleanup activities but nothing more.

- **Information:** Several people expressed concern about a lack of warning signs for fishermen and recreational users and suggested that such signs should be installed. People are concerned about whether adequate information reaches the Spanish-speaking and other non-English-speaking communities and whether the average person and immigrants understand the risks.

- **Image:** While some people described the Lower Duwamish Waterway neighborhood as an industrial area, others are concerned that it is perceived as a dumping ground.

- **Tribal Rights:** Some community members are concerned that the tribal rights to harvest fish and shellfish in the Lower Duwamish Waterway are not being honored at a level protective of these treaty rights.

Other public concerns may be identified over the course of the cleanup through: public comment periods; further community interviews; surveys; meetings; and other contacts with individuals, community groups, or organizations.

Ecology will work to respond to community concerns through the cleanup process and coordination with other regulatory agencies and property owners as necessary.

Public Participation Activities and Responsibilities

The purpose of this Public Participation Plan is to promote public understanding and participation in the MTCA activities planned for this site. This section of the plan addresses how Ecology will share information and receive public comments and community input on the site activities.

Public Participation Activities

Ecology uses a variety of activities to facilitate public participation in the investigation and cleanup of MTCA sites. Ecology will evaluate input provided by community residents, businesses, and other stakeholders. Ecology will integrate this input into its decisions as much as is feasible.

The following is a list of the public involvement activities that Ecology will use, their purposes, and descriptions of when and how they will be used during this site's source control investigation and cleanup.

Formal Public Comment Periods

Comment periods are the primary method Ecology uses to get feedback from the public on proposed investigation and cleanup decisions. Comment periods usually last 30 days and are required at key points during the investigation and cleanup process before final decisions are made.

During a comment period, the public can comment in writing and via e-mail. After formal comment periods, Ecology reviews all comments received and may respond in a document called a Responsiveness Summary.

Ecology will consider the need for changes or revisions based on input from the public. If significant changes are made, then a second comment period may be held. If no significant changes are made, then the draft document(s) will be accepted and finalized.

Future public comment periods will be held for other documents and legal agreements that are developed for the site.

Public Meetings and Hearings

Public meetings may be held at key points during the investigation and cleanup process. Ecology also may offer public meetings for actions expected to be of particular interest to the community. These meetings will be held at locations convenient to the community. If ten or more people request a public meeting or hearing during the 30 day comment period, Ecology will hold a public meeting for the purpose of taking oral comments on draft documents.

Information Repositories

Information repositories are places where the public may read and review site information, including documents that are the subject of public comment.

Ecology has established two repositories for the Duwamish Shipyard site.

- Washington State Department of Ecology, 3190 160th Avenue SE, Bellevue, WA 98008, (425) 649-7190. Please call for an appointment.
- Seattle Public Library, South Park Branch, 8604 Eight Ave S. at Cloverdale St. Seattle, WA

Site information also will be posted on Ecology's web site at:

http://www.ecy.wa.gov/programs/tcp/sites/lower_duwamish/sites/duwamish_shipyard/dsy_hp.htm

Site Register

Ecology's Toxics Cleanup Program uses the *Site Register* to announce all of its public meetings and comment periods, as well as many other activities. To receive the *Site Register* in electronic or hard copy format, contact Linda Thompson at

(360) 407-6069 or by e-mail at ltho461@ecy.wa.gov. It is also available on Ecology's web site at: **http://www.ecy.wa.gov/programs/tcp/pub_inv/pub_inv2.html**

Mailing List

Ecology has compiled a mailing list for the site. The list includes individuals, groups, public agencies, elected officials, private businesses, potentially affected parties, and other known interested parties. The list will be maintained at Ecology's Northwest Regional Office and will be updated as needed.

To have your address added or deleted from this mailing list, please contact Mark Edens, Ecology's Site Manager at (425) 649-7070 or mede461@ecy.wa.gov and reference Duwamish Shipyard Site.

Fact Sheets

Ecology will mail fact sheets to persons and organizations interested in the Duwamish Shipyard, Inc. site to inform them of public meetings and comment opportunities and important site activities. Ecology also may mail fact sheets about the progress of site activities.

Newspaper Display Ads

Ecology may place ads in the *Seattle Times* and other appropriate newspapers, to announce public comment periods and public meetings or hearings for the site. Ecology's goal is to be transparent to the community and all other stakeholders. This will be done by posting electronic documents on Ecology's website for stakeholder review at key points in the Duwamish Shipyard, Inc. site cleanup process. The stakeholders will be able to see the planned schedule for the next phase of work at the Duwamish Shipyard, Inc. site by reviewing the Agreed Order for the site.

Public Participation Grants and Technical Assistance

Additionally, citizen groups living near contaminated sites may apply for public participation grants during open application periods. These grants help citizens receive technical assistance in understanding the cleanup process and create additional avenues for public participation.

NOTE: Ecology currently does not have a citizen technical advisor for providing technical assistance to citizens on issues related to the investigation and cleanup of the Site.

Public Participation Plan Amendments

The Plan was developed by Ecology and complies with the MTCA regulations (Chapter 173-340 WAC). It will be reviewed as cleanup progresses and may be amended if necessary. Amendments may be submitted to Ecology's site manager, Mark Edens, for review and consideration. Ecology will determine final approval of the Plan as well as any amendments.

If you have questions or need more information about this plan or the Duwamish Shipyard, Inc. site, please contact:

Mark Edens, Site Manager
Washington State Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008
Tel: (425) 649-7070
Email: mede461@ecy.wa.gov

Glossary

Agreed Order: A legal document issued by Ecology which formalizes an agreement between the department and potentially liable persons (PLPs) for the actions needed at a site. An agreed order is subject to public comment. If an order is substantially changed, an additional comment period is provided.

Arsenic: A metallic element that forms a number of poisonous compounds, arsenic is found in nature at low levels mostly in compounds with oxygen, chlorine, and sulfur.

Cadmium: A metallic element whose salts are toxic and cause cancer.

Chromium: A naturally occurring element found in rocks, animals, plants, soil, and in volcanic dust and gases. Chromium (III) is an essential nutrient that helps the body use sugar, protein, and fat. Chromium (VI) at high levels can damage the nose and can cause cancer. Ingesting large amounts of chromium (VI) can cause stomach upsets and ulcers, convulsions, kidney and liver damage, and even death.

Cleanup: The implementation of a cleanup action or interim action.

Cleanup Action: Any remedial action, except interim actions, taken at a site to eliminate, render less toxic, stabilize, contain, immobilize, isolate, treat, destroy, or remove a hazardous substance that complies with cleanup levels; utilizes permanent solutions to the maximum extent practicable; and includes adequate monitoring to ensure the effectiveness of the cleanup action.

Cleanup Level: The concentration of a hazardous substance in soil, water, air or sediment that is determined to be protective of human health and the environment under specified exposure conditions.

Cleanup Process: The process for identifying, investigating, and cleaning up hazardous waste sites.

Comment Period: A time period during which the public can review and comment on various documents and proposed actions. For example, a comment period may be provided to allow community members to review and comment on proposed cleanup action alternatives and proposed plans.

Contaminant: Any hazardous substance that does not occur naturally or occurs at greater than natural background levels.

Copper: A reddish-brown metallic element that is an excellent conductor of heat and electricity and is widely used for electrical wiring, water piping, and corrosion-resistant parts, either pure or in alloys such as brass and bronze. Copper is toxic in unbound form.

Dioxins/Furans: Chemicals created by heating or burning chlorine-containing compounds in the presence of organic (carbon-containing materials. Sources of dioxins/furans include incinerators, pulp and paper mills, and chemical manufacturers. Dioxins and furans can cause a number of health effects. The most well known dioxin/furan (2,3,7,8 TCDD) is considered likely to be a cancer causing substance to humans. Other health effects related to dioxin/furan exposure include changes in hormone levels and, at high doses, a skin disease known as chloracne.

Environment: Any plant, animal, natural resource, surface water (including underlying sediments), ground water, drinking water supply, land surface (including tidelands and shorelands) or subsurface strata, or ambient air within the state of Washington.

Feasibility Study (FS): A study to evaluate alternative cleanup actions for a site. A comment period on the draft report is required. Ecology selects the preferred alternative after reviewing those documents.

Groundwater: Water found beneath the earth's surface that fills pores between materials such as sand, soil, or gravel. In aquifers, groundwater occurs in sufficient quantities that it can be used for drinking water, irrigation, and other purposes.

Hazardous Substance: Certain categories of substances defined by law and regulation that pose a threat to human health and/or the environment. Typical hazardous substances are materials that are toxic, corrosive, ignitable, explosive, or chemically reactive.

Information Repository: A file containing current information, technical reports, and reference documents available for public review. The information repository is usually located in a public building that is convenient for local residents such as a public school, city hall, or library.

Interim Action: Any remedial action that partially addresses the cleanup of a site.

Lead: A bluish-white soft malleable ductile plastic but inelastic heavy metallic element found mostly in combination and used especially in pipes, cable sheaths, batteries, solder, and shields against radioactivity. Lead may cause irreversible neurological damage as well as renal disease, cardiovascular effects, and reproductive toxicity.

Mercury: A silvery-white poisonous metallic element, liquid at room temperature and used in thermometers, barometers, vapor lamps, and batteries and in the preparation of chemical pesticides. Mercury damages the central nervous system, endocrine system, kidneys, and other organs, and adversely affects the mouth, gums, and teeth.

Model Toxics Control Act (MTCA): Washington State's law that governs the investigation, evaluation and cleanup of hazardous waste sites. Refers to RCW 70.105D. It was approved by voters at the November 1988 general election and known is as Initiative 97. The implementing regulation is WAC 173-340.

Polynuclear Aromatic Hydrocarbon (PAH): A class of organic compounds, some of which are long-lasting and carcinogenic. These compounds are formed from the combustion of organic material and are ubiquitous in the environment. PAHs are commonly formed by forest fires and by the combustion of fossil fuels.

PCBs (polychlorinated biphenyls): A group of toxic, persistent chemicals. Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including transformers and capacitors for insulating purposes, and in gas pipeline systems as a lubricant. PCBs are a serious threat to public health because they have been proven to cause cancer in animals. In 1977 they were made illegal to produce, yet large amounts still remain in the environment.

Potentially Liable Person (PLP): Any person whom Ecology finds, based on credible evidence, to be liable under authority of RCW 70.105D.040.

Public Notice: At a minimum, adequate notice mailed to all persons who have made a timely request of Ecology and to persons residing in the potentially affected vicinity of the proposed action; mailed to appropriate news media; published in the local (city or county) newspaper of largest circulation; and opportunity for interested persons to comment.

Public Participation Plan: A plan prepared under the authority of WAC 173-340-600 to encourage coordinated and effective public involvement tailored to the public's needs at a particular site.

Release: Any intentional or unintentional entry of any hazardous substance into the environment, including, but not limited to, the abandonment or disposal of containers of hazardous substances.

Remedial Action: Any action to identify, eliminate, or minimize any threat posed by hazardous substances to human health or the environment, including any investigative and monitoring activities of any release or threatened release of a hazardous substance and any health assessments or health effects studies.

Remedial Investigation (RI): A study to define the extent of problems at a site. When combined with a study to evaluate alternative cleanup actions it is referred to as a Remedial Investigation/Feasibility Study (RI/FS). In both cases, a comment period on the draft report is required.

Semi-Volatile Organic Compounds: This group includes a variety of chemicals that have boiling points higher than water and that may become a gas at temperatures above room temperature. Most of these substances are used as industrial chemicals. They include phenols, polynuclear aromatic hydrocarbons, and phthalates. Sites where these potentially toxic chemicals may be found include burn pits, chemical manufactury8in plants and disposal areas, electroplating/metal finishing shops, firefighting training areas,

hangars/aircraft maintenance areas, solvent degreasing areas, vehicle maintenance areas, and wood preserving pits. These compounds generally evaporate slowly at room temperature. Their water solubility and environmental persistence is highly variable, and they are commonly found as contaminants in soil and water.

Site: Any building, structure, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, vessel, or aircraft; or any site or area where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located.

Site Register: Publication issued every two weeks of major activities conducted statewide related to the study and cleanup of hazardous waste sites under the Model Toxics Control Act. To receive this publication, please call (360) 407-7200.

Superfund: The federal government's program to clean up the nation's uncontrolled hazardous waste sites.

Surface Water: Lakes, rivers, ponds, streams, inland waters, salt waters, and all other non-underground waters and courses within the state of Washington or under the jurisdiction of the state of Washington.

Total Petroleum Hydrocarbons (TPH): A scientific measure of the sum of all petroleum hydrocarbons in a sample (without distinguishing one hydrocarbon from another). The "petroleum hydrocarbons" include compounds of carbon and hydrogen that are derived from naturally occurring petroleum sources or from manufactured petroleum products (such as refined oil, coal, and asphalt).

Tributyltin: An organic compound of tin commonly used in marine antifouling paints to reduce the growth of aquatic organisms on ship's hulls. Other uses of this compound include wood preservation and antifungal action in textiles and industrial water systems. This compound is considered a moderately to highly persistent organic pollutant and it can cause irreversible damage to aquatic life.

Volatile Organic Compounds: This group includes a variety of chemicals that become a gas at room temperature. Most such substances are industrial chemicals and solvents. They include light alcohols, acetone, trichloroethylene, perchloroethylene, dichloroethylene, benzene, vinyl chloride, toluene, and methylene chloride. These potentially toxic chemicals are used as solvents, degreasers, paints, thinners, and fuels. Because of their volatile nature, they readily evaporate into the air, increasing the potential exposure to humans.

Zinc: Zinc is a metallic chemical element; it has a white color with a bluish tinge. It has a high resistance to atmospheric corrosion. A major use is as a protective coating for iron and steel sheet and wire. Excess zinc in the body interferes with the metabolism of other minerals in the body.

References

Anchor Environmental, 2006. *Preliminary Investigation Data Report, Duwamish Shipyard, Inc. (Site # 1429)*

Science Applications International Corporation (SAIC), 2007. *Lower Duwamish Waterway Glacier Bay Source Control Area Summary of Existing Information and Identification of Data Gaps Report*