Frequently Asked Questions about
Budd Inlet Sediments Investigation

From Ecology's Toxics Cleanup Program, Southwest Regional Office

The **Washington State Department of Ecology (Ecology)** prepared these Frequently Asked Questions (FAQ) to answer general questions about the Ecology area wide sediments investigation in Budd Inlet. This FAQ explains Ecology's involvement in the Budd Inlet area and, specifically the sediments investigation. Ecology worked with the Washington State Department of Health and Thurston County Public Health and Social Services Department to respond to questions about potential public health concerns.

Background Information

Ecology began an investigation of Budd Inlet sediments in April 2007. The investigation began after the Port of Olympia (Port) and the U.S. Army Corps of Engineers (Corps) discovered elevated levels of dioxins in areas of Budd Inlet scheduled for routine maintenance dredging. Although dioxins were found throughout the inlet, the highest levels of dioxins were found in sediments near stormwater discharge pipes and the Port's shipping berths.

The specific source(s) of dioxins in Budd Inlet is unknown. Most likely, dioxin contamination resulted from historical industrial uses of shoreline areas and stormwater runoff.

The goal of the Ecology-led investigation is to determine:

- The nature and extent of dioxin contamination throughout Budd Inlet.
- Possible sources of dioxin.
- Areas in need of cleanup.

The Port and Ecology are negotiating an agreed order for the dredging of two of the Port's shipping berths. The dredging will be considered an interim action as part of the area wide cleanup. This is an opportunity to begin removing contaminated sediments from Budd Inlet. The agreed order for the interim action will be available for public review and comment before the dredging begins.

Ecology has received validated data from the analysis of sediment samples and is currently reviewing the data. Ecology has sent some of the stored samples for analysis to better understand the extent of dioxin contamination in the inlet (See Budd Inlet Sediments Investigation Update for more information).

Contact Information

For **technical questions** about site cleanup activities, contact Rebecca S. Lawson, P.E., LHG, Site Manager, at (360) 407-6241 or rlaw461@ecy.wa.gov.

For information about **public involvement**, contact Meg Bommarito, Public Involvement Coordinator, at (360) 407-6255 or mbom461@ecy.wa.gov.

More information about Budd Inlet Sediments Investigation can be found at: http://www.ecy.wa.gov/programs/tcp/sites/budd_inlet/budd_inlet_hp.htm. The **Public Participation Plan** for this site is now available on the website.

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General Information

Q: What is the role of Ecology?

The role of the Department of Ecology is to lead the investigation and cleanup of Budd Inlet according to the Washington State Model Toxics Control Act (173.340 WAC). Once the extent and nature of contamination is determined, Ecology will select the most appropriate course of action. Ecology will choose a cleanup remedy and oversee its implementation.

For the Budd Inlet Sediment Investigation, Ecology is currently conducting an initial study to determine the:

- Nature and extent of dioxin contamination throughout Budd Inlet.
- Possible sources of dioxins.
- Areas in need of cleanup.

Ecology is responsible for protecting human health and the environment and will keep the community and stakeholders informed as the cleanup moves forward. There will be several opportunities for public involvement during this cleanup.

Q: What is the role of the Port of Olympia in this investigation?

Ecology is negotiating an Agreed Order with the Port to complete maintenance dredging. The Port will be responsible for completing all activities required in the agreed order and for funding this project.

Because this dredging is considered part of a formal cleanup under the Model Toxics Control Act and the Port of Olympia is considered a local government, the Port is potentially eligible for state funding of up to 50 percent of the total project cost as part of the remedial grant program. However, funding is not guaranteed. Ecology prioritizes eligible sites and determines the most appropriate use of funds based on availability of funding. Visit the Ecology website at http://www.ecy.wa.gov/programs/swfa/grants/rag.html for more information about this program.

Q: What is the role of state or county health departments?

The State Department of Health and the Thurston County Public Health and Social Services officials will assess health concerns raised by citizens about exposure to contaminated sediments in Budd Inlet using information provided by Ecology. Ecology and State Health will collaborate with Thurston County Public Health and Social Services to share this information with the communities.

Q: What is the purpose of the sampling?

The purpose of the sampling is to investigate the location and levels of dioxin in Budd Inlet. Specifically, the goals of sampling are to:

- Characterize the nature and extent of dioxin contamination throughout Budd Inlet.
- Evaluate possible sources of dioxins.

- Prioritize areas for cleanup.
- Determine what additional sampling is needed.

Q: Is Budd Inlet part of Governor Gregoire's Puget Sound Initiative?

Yes. The Puget Sound Initiative seeks to protect and restore the health of the Puget Sound. Pollution reduction is a critical part of these efforts. Since Budd Inlet is part of Puget Sound, removing contaminated sediments will help achieve the larger goal of cleaner and safer waters for both the wildlife and the people that enjoy the Sound.

Q: How does this investigation relate to other Ecology cleanups in Budd Inlet?

Ecology's Toxic Cleanup Program is currently working on several cleanup sites within Budd Inlet. These sites include: Hardel Mutual Plywood, Cascade Pole, Port of Olympia Voluntary Cleanup site (in the East Bay district), Industrial Petroleum and Reliable Steel. These sites are managed as separate sites but will provide some additional information that could be useful during the area wide study.

Cleanup and Dredging

Q: What are the options for dioxin cleanup and when will Ecology decide on cleanup methods?

Ecology is still in the early stages of determining the scope of this area wide cleanup project and has not yet determined a final cleanup remedy. Once dioxin levels and extent of contamination are better understood, Ecology will complete a feasibility study which will examine potential cleanup remedies.

The initial phase of sampling has been completed and Ecology has received some of the results and is currently evaluating them (Please see attached fact sheet for more information). Ecology has requested that some of the stored samples (collected during initial sampling) be analyzed and is awaiting the results. Ecology expects to receive a full report containing a summary and discussion of both datasets in November. The next step in the investigation and cleanup will be made after the report is received.

The Port is moving forward with plans to complete maintenance dredging in two of its shipping berths. Ecology considers the dredging part of the area wide cleanup of Budd Inlet and an opportunity to begin removal of contaminated sediments. Additional dredging may be done as part of the final cleanup remedy.

Q: Who has the responsibility to clean up the sediments?

The role of Ecology's Toxics Cleanup Program, is to oversee the cleanup of contaminated sites. Ecology identifies the responsible parties and then holds them responsible for the cleanup. Since Ecology has not yet identified the source(s) of the dioxins, responsibility for the cleanup has not been determined. Once the source(s) is known, the responsible party or parties will work with Ecology to clean the contaminated area and fund the cleanup. The state of Washington is funding the initial investigation because no liable parties have been named.

Q: Why is the Port of Olympia dredging this area?

The Port of Olympia is dredging the berthing areas of Budd Inlet to maintain the permitted appropriate and safe depths for Port marine terminal shipping activities.

The U.S. Army Corps of Engineers will also be performing maintenance dredging of the federal navigation channel in the Inlet. This work will allow continued safe use of Budd Inlet for maritime commerce. The Corps is responsible for maintaining federal channels in all navigable US waters.

Q: What will happen to the dredged sediments?

The Dredged Materials Management Program (DMMP) oversees the disposal (and use) of the dredged sediments from Washington waters. The DMMP consists of representatives from four regulatory agencies including the U.S. Environmental Protection Agency (EPA), the Corps, the Washington State Department of Natural Resources (DNR) and Ecology. They manage twelve in-water dredged material disposal sites. Guidelines have been established to help determine which disposal locations are appropriate for dredged sediments.

The sediments dredged from the Port's berthing area will require upland disposal at an approved facility. Sediments dredged from the federal navigation channel qualify for open water disposal near Anderson and Ketron Islands.

Q: Will the dredging disturb the dioxins in the sediments and lead to more pollution?

Dredging may cause some short-term impacts on water quality. The Port will be required to take measures to address or minimize these impacts taking into account the sediment dioxin levels. Overall, dredging will remove far more dioxins than it stirs up. Since dioxins are not very water soluble and bind strongly to sediments, they are more likely to stay attached to the sediments during dredging than float in the water. The dredging will lower the overall risk of potential exposure to humans over the long term and result in a cleaner marine environment.

Ecology does not believe that cleanup work in Budd Inlet will increase the risk of dioxin exposure to humans. As long as the public follows warnings by the State Department of Health and Thurston County Public Health and Social Services to avoid consumption of seafood from Budd Inlet, risks to their health should not increase.

Dioxins and Potential Health Concerns

Q: What are dioxins?

Dioxins and dioxin-like compounds represent a family of chemical compounds that have similar physical structures and biological characteristics. Dioxins are not created intentionally but are byproducts of human and natural activities. These activities include combustion and incineration (domestic and industrial), forest fires, chlorine bleaching of pulp and paper, automobile operation (from leaded fuels), certain types of chemical manufacturing and processing and other industrial processes.

Although typically released in very small amounts, dioxins tend to build up in the environment because they do not break down. They are found everywhere in the environment; in air, soil and water. Dioxins strongly bind to soil and sediments.

Q: What is the risk of dioxins to human health?

Most of what is known about the health effects of dioxins comes from studies of workers exposed to relatively high levels of dioxins. These studies and research with animals indicate that dioxins at high levels are likely to cause cancer in humans and can cause developmental and reproductive effects.

However, the background levels that people are normally exposed to are generally much lower. The possibility of adverse effects from low levels of exposure to dioxins in the general public remains debatable and controversial. This is because we are exposed to different mixtures of dioxins over time and it is difficult to know how toxic the various mixtures are. It is also a challenge to measure or observe the effects, if any, from exposures to the general public at these low background levels. More data are needed to better understand the risks to our health from low levels of exposure.

Most of our exposure to dioxins comes from the foods we eat. In the case of Budd Inlet, it is unlikely that exposure would increase significantly from visiting and recreation activities, assuming people continue to follow Health Department suggestions to avoid consumption of shellfish and finfish from lower Budd Inlet.

Q: How can I lower my risk of exposure to dioxins?

There are several steps you can take to reduce your dioxin exposure. These include:

- Reduce your intake of animal fats (meat, milk)
- Do not eat seafood from Budd Inlet
- Teach children not to eat sand or dirt
- Do not burn garbage or yard waste

Q: Is the risk the same for the different forms of dioxins?

No, different forms of dioxins have different levels of toxicity. Toxicity will depend on what forms are present and in what amounts.

Q: What is the source of dioxins in Budd Inlet? Will the sampling tell us that?

Ecology is not sure of the exact source of the dioxins in Budd Inlet. Part of the purpose of the current investigation is to determine possible sources. Most likely, dioxins in Budd Inlet are a result of historic industrial activities along the shoreline and storm water runoff.

Q: How are people exposed to dioxins in Budd Inlet?

People are exposed to small amounts of dioxins on a daily basis through the air we breathe and the food we eat and drink. The primary way people could be exposed to dioxins in Budd Inlet would be by eating fish caught from the area.

Some people have expressed concern that direct contact with dioxins in beach sediments or water in Budd Inlet may add to that exposure. Although there is no conclusive evidence that indicates this is true, here are some additional steps you can take if you share these concerns :

- Wash with clean water as soon as possible after being out on the beach in lower Budd Inlet.
- If you have pets that have exposure to Budd Inlet water, make sure they are bathed before letting them back in the house (bathing pets will not increase your personal exposure).

Q: What kinds of activities can we do and still be safe? (for example, walking on beach, boating, fishing, playing in sand)

Existing data suggest there is little risk associated with recreational contact with Budd Inlet sand, sediment and water. The Thurston County Health and Human Services Department recommends that people not harvest or eat fish or shellfish from lower Budd Inlet. However, people wanting to eliminate this risk altogether should avoid the area. In addition, the Department recommends that you rinse off with clean, potable water after recreational contact with the sand, sediment and water from lower Budd Inlet.

Q: Are there signs warning people about dioxins and shellfish issues?

Signs are in place around the Cascade Pole site to restrict public access and warn against shellfish consumption. In addition, Thurston County Public Health and Human Services is working to identify areas where additional signs are needed along the beach. The key messages of these signs will be:

- Do not drink water from Budd Inlet
- Do not eat fish or shellfish from lower Budd Inlet
- Limit contact with water in lower Budd Inlet
- Rinse off with clean water after coming into contact with sediment, sand or water in lower Budd Inlet

Q: Will the dioxins affect our drinking water?

Your drinking water is not impacted by dioxin levels in Budd Inlet. Drinking water for Thurston County comes from ground water sources. Municipal water comes from McAllister Springs and a number of wells in the county. By law, these public water systems are approved and monitored by the State Department of Health and must meet drinking water standards.

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Project Update and Frequently Asked Questions