



RESPONSIVENESS SUMMARY

**WHATCOM WATERWAY SITE
Bellingham, Washington**

First Amendment to the Consent Decree

August 2011

ISSUED BY:

WASHINGTON STATE DEPARTMENT OF ECOLOGY

TOXICS CLEANUP PROGRAM

1. Introduction

On March 11, 2011, the proposed First Amendment to the Consent Decree (Amendment) for the Whatcom Waterway site (Site) in Bellingham was issued for a 30-day public comment period. The public comment period was subsequently extended through April 27, 2011, for a total of 47 days. Public involvement activities related to this public comment period included:

- Distribution of a fact sheet describing the Site and the documents through a mailing to more than 2,800 people, including neighboring businesses and other interested parties;
- Publication of one paid display ad in *The Bellingham Herald*, dated March 13, 2011;
- Publication of notice in the Washington State Site Register, dated March 24, 2011;
- A public meeting held on March 15, 2011;
- Announcement of the public comment period and posting of the documents on the Ecology web site; and,
- Providing copies of the documents through information repositories at the Washington State Department of Ecology’s (Ecology’s) Bellingham Field Office and Northwest Regional Office, and the Bellingham Public Library – Downtown Branch.

A total of 21 persons and organizations submitted written comments on the Amendment. The commenters are listed in Table 1-1. Comment letters are organized alphabetically by commenter in Appendix A.

Section 2 of this document provides background information on the Site and Site cleanup activities, and Section 3 presents anticipated next steps. Section 4 summarizes the comments received and Ecology’s responses to those comments. To review a comment in its original form, refer to Appendix A.

Table 1-1. Summary of Commenters

| Commenter | | Commenter | |
|-----------|---------------|-----------|------------------------|
| 1 | Bell, Jerry | 12 | People for Puget Sound |
| 2 | Blethen, John | 13 | Piper, Scott |
| 3 | Dyson, George | 14 | Postlewait, Randy |
| 4 | Ferris, Ryan | 15 | RE Sources |
| 5 | Foster, Kevin | 16 | Ringenbach, Dean |
| 6 | Frost, Brett | 17 | Rohde, Leroy |
| 7 | Hansen, Jim | 18 | Schmidt, Joe |
| 8 | Harris, Wendy | 19 | Streib, Darol |
| 9 | Johnson, Tip | 20 | Timmer, William |
| 10 | King, James | 21 | Williams, Darren |
| 11 | Munson, John | | |

2. Background

The Site includes about 200 acres on the downtown Bellingham waterfront. Contamination at the Site is the result of historic releases from industrial waterfront activities, including mercury discharges from the former Georgia Pacific (G-P) Chlor-Alkali plant. The Chlor-Alkali plant was constructed by G-P in 1965 to produce chlorine and sodium hydroxide for use in bleaching and pulping wood fiber. The Chlor-Alkali plant discharged mercury-containing wastewater into the Log Pond (an industrially constructed pond open to the Whatcom Waterway) between 1965 and 1971. Between 1971 and 1979, pretreatment measures were installed to reduce mercury discharges. Chlor-Alkali plant wastewater discharges to the Log Pond were discontinued in 1979 following construction of a waste water treatment lagoon. The pulp mill closed in 2001.

Initial environmental investigations of the Site identified mercury in sediment at concentrations that exceeded Model Toxics Control Act (MTCA) standards (Chapter 173-340 Washington Administrative Code [WAC]) and Sediment Management Standards (SMS; Chapter 173-204 WAC). These are the state standards that govern the cleanup of contaminated sediment sites. The MTCA regulations specify criteria for the evaluation and conduct of a cleanup action. The SMS regulations dictate the standards for cleanup.

In 1996, G-P entered a legal agreement (agreed order) with Ecology to complete an environmental study of the Site (Remedial Investigation) and evaluate cleanup options (Feasibility Study) given the company's continued industrial land use

In 2005, the Port of Bellingham (Port) acquired 137 acres of waterfront property from G-P, including property within the Site. The Port joined G-P on the agreed order with Ecology and completed a Supplemental Remedial Investigation and Feasibility Study (RI/FS) since their land use plans differed from G-P's plans. The Draft Supplemental RI/FS and a Draft Supplemental Environmental Impact Statement (DSEIS) were issued for public review in 2006. The Supplemental RI/FS was accepted by Ecology as final in July 2007.

In October 2007, after public notice and opportunity to comment, a Consent Decree for the cleanup of the Whatcom Site was entered into Whatcom County Superior Court. Ecology also published a Final Supplemental EIS. The Consent Decree included a Cleanup Action Plan (CAP) describing Ecology's selected cleanup action for the Site.

Under the terms of the Consent Decree, the Port, the City of Bellingham (City), the Department of Natural Resources (DNR), and Meridian Pacific LLC, were required to collect pre-remedial design investigation data, develop engineering design deliverables, obtain required permits, and construct and monitor the cleanup action. The parties have completed the data collection work with Ecology oversight. The data are documented in the Ecology approved Pre-Remedial Design Investigation (PRDI) Data Report (Anchor QEA, 2010).

The pre-remedial design investigation and other preliminary design activities generated new information that affects material management options for select areas of the Site. The new information includes the following:

- Levels of dioxin/furans in buried sediments offshore of the shipping terminal (Units 1A/1B) are likely too high for open-water disposal as planned in the original CAP;
- Levels of contaminants in some buried sediments adjacent to the shipping terminal (Unit 1C) are similar to contaminant levels in Units 1A/1B;
- Preliminary modeling indicates a high potential for erosion at the outside corner of the former industrial waste lagoon (Unit 5B); and
- The Port plans early redevelopment actions along the shoreline adjacent to the inner waterway portion of the Site.

The primary effect of this information is that a different disposal option is needed for the 1A/1B materials that were slated for open-water disposal in the original Consent Decree. This also presents an opportunity to manage a portion of the 1C materials and the 5B materials differently. Therefore, Ecology proposed changes to the original cleanup action for these specific areas of the Site. Ecology also proposed changes to the project sequencing to address contamination in early redevelopment areas. The proposed changes are described in the First Amendment to the Consent Decree (Amendment), which was issued for public comment.

3. Next Steps

Ecology has not made significant changes to the Amendment as a result of public comment. Therefore, it will be signed by the Port, City, DNR, Meridian Pacific, and Ecology, and entered into the records of Whatcom County Superior Court.

Following entry of the Amendment in court, the cleanup will move forward into remedial design and permitting for Phase 1 of the cleanup action. As part of this work, an Engineering Design Report (EDR) will be issued for public review and comment. The Phase 1 EDR is expected to be released for public review in late 2011 or early 2012. Construction of Phase 1 of the cleanup action is expected to take approximately 2 years following completion of remedial design and permitting.

Phase 2 of the cleanup will be initiated following completion and Ecology approval of the Phase 1 As-Built Report. The design and permitting process for Phase 2 will include public review and comment on the Phase 2 EDR. Construction of Phase 2 of the cleanup action is expected to take 3 years following completion of remedial design and permitting.

Long-term monitoring will be conducted following completion of construction activities.

4. Summary of Comments and Responses

This section provides a detailed summary of the individual comments received, and Ecology's responses to those comments.

4.1 Commenter #1 (Bell, Jerry)

Jerry Bell submitted written comments to Ecology following the public meeting hosted by Ecology on March 15, 2011 (Commenter #1, Appendix A).

Comment #1: Mr. Bell stated support for the proposed cleanup as described in the Amendment, citing concerns about the costs of the original cleanup approach. He stated that the dredging and cleanup needs to start as soon as possible, and that Ecology's proposed plan will do that.

Response: Comment noted. Construction of Phase 1 of the cleanup action is planned to begin in the fall of 2012.

4.2 Commenter #2 (Blethen, John)

John Blethen submitted written comments to Ecology by electronic mail dated April 26, 2011 (Commenter #2, Appendix A).

Comment #1: Mr. Blethen stated that the least expensive plan for cleanup was the plan proposed by Anchor Environmental and Georgia-Pacific involving conversion of the Aerated Stabilization Basin (ASB; Site Unit 8) to a confined upland disposal site. Mr. Blethen stated his support for use of that previous alternative because of its lower cost, rather than the plan described in the Amendment.

Response: Conversion of the ASB to a confined upland disposal site was a viable element of the cleanup under G-P's ownership and planned industrial uses. However, the current land owner, the Port, plans to convert the ASB to a marina. Therefore, confined upland disposal in the ASB site is no longer viable.

4.3 Commenter #3 (Dyson, George)

George Dyson submitted written comments to Ecology by electronic mail on March 15, 2011 and on April 26, 2011 (Commenter #3, Appendix A).

Comment #1: Mr. Dyson stated that if confined aquatic disposal is being considered, then the cleanup decision for the inner waterway and head of the waterway should also be revisited. He stated concerns regarding the adequacy of data describing sediment conditions at the head of the waterway, and describing potential contaminant mobility over time.

Response: The cost of disposal in the ASB is less than upland disposal. One of the main reasons for this is that the sand beneath the ASB that must be removed to create disposal capacity can be cost-effectively removed by high-production hydraulic dredging, and the clean material generated by this removal can be used elsewhere, reducing the amount of clean material that must be purchased and imported to the Site. As a result, the Amendment calls for excavating the maximum volume of clean material that can be cost-effectively removed and used elsewhere.

Creating additional disposal capacity in the ASB to accommodate the volume of buried contaminated sediments in the inner waterway and head of the waterway would require excavating clayey sediment that is much more difficult to remove, that cannot be used elsewhere, and that would require alternative disposal. Removal of this material would likely require slower, higher-cost mechanical dredging because the clayey soil tends to plug hydraulic dredging pipes. Alternative disposal would likely require transfer to barges for open-water disposal at Rosario or Port Gardner disposal sites. For these reasons, disposal in the ASB is not a cost-effective option for any material beyond what is described in the proposed Amendment.

Regarding data adequacy and contaminant mobility, in response to comments received on the 2007 consent decree, additional testing was performed at the head of the waterway during the 2009 remedial design investigation work (PRDI Data Report [Anchor QEA, 2010]). The PRDI investigation shows that surface sediments in this area continue to comply with cleanup levels. As a result, long-term monitoring remains the required cleanup action for this area of the Site to ensure continued compliance. Additional evaluations of contaminant mobility will be provided as part of the future EDR, which will be issued for public review and comment.

Comment #2: Mr. Dyson stated that the consideration of confined aquatic disposal represents a shift in policy and should trigger a reconsideration of the entire cleanup plan.

Response: Ecology is not sure of what is meant by a shift in policy. The proposed Amendment considers changes to the remedy in areas of the site where the original 2007 remedy could not be implemented as planned, and where improvements to the remedy could be implemented consistent with remedy selection criteria under the MTCA. Also, see response to Comment #1 above.

Comment #3: Mr. Dyson stated his concern that the Amendment does not discuss how the Consent Decree signatories are paying for the cleanup action, what portion of the costs are insured, or how the Amendment shifts costs and liabilities.

Response: The Consent Decree signatories are responsible for implementing Ecology's cleanup decision in accordance with the MTCA. Ecology is not involved in how potentially liable parties share costs or allocate costs among

different payment mechanisms. We encourage you to contact the Port and City directly with these questions. In terms of liability, from a MTCA standpoint, G-P remains liable for the cleanup of the Whatcom Waterway Site.

Comment #4: Mr. Dyson expressed concern regarding the effectiveness of natural recovery at the head of the Waterway due to the presence of wood waste in subsurface sediment, and due to the presence of visible methane production from the underlying sediments at certain times of the year. Mr. Dyson recommended that the sediments in this area of the Waterway be dredged and disposed of in the ASB.

Response: See Ecology response to Comment #1 above. Methane generation is common in estuarine sediments and does not necessarily indicate a potential concern for this natural recovery area or its ability to provide estuarine habitat functions.

Note that previous capping of sediments containing wood waste has been shown to be effective in the Log Pond where eel grass is re-colonizing. Furthermore, some members of the Bellingham Bay Action Team including RE Sources, the Washington Department of Fish and Wildlife, the City of Bellingham and the Port of Bellingham, have recommended that a habitat restoration project be pursued in this area. Such restoration will likely include layering clean material over the existing clean surface sediments.

4.4 Commenter #4 (Ferris, Ryan)

Ryan Ferris submitted written comments to Ecology by electronic mail on April 25, 2011 (Commenter #4, Appendix A).

Comment #1: Mr. Ferris stated his concern that the Site may be subject to future earthquakes or tsunamis. Mr. Ferris provided citations to recent literature articles and online resources regarding the history of these types of events in the region and their potential recurrence. He stated that though earthquake and tsunami risks may fall outside of Ecology's typical area of concern, tsunami protection should be incorporated into the cleanup action.

Response: Any event that may jeopardize the integrity of the cleanup action, exposing humans and the environment to contamination above cleanup levels, is of concern. The engineering design process for the cleanup action will include an evaluation of potential disturbance factors, including seismic events and tsunamis. The results of the evaluation will be included in an EDR that will be issued for public review and comment. The EDR will also include a monitoring and contingency plan to ensure that any significant disturbance is detected and corrected as necessary to maintain the integrity of the cleanup action.

4.5 Commenter #5 (Foster, Kevin)

Kevin Foster submitted written comments to Ecology following the public meeting hosted by Ecology on March 15, 2011 (Commenter #5, Appendix A).

Comment #1: Mr. Foster stated support for the proposed cleanup as described in the Amendment. He expressed concern that the cleanup should move forward with dredging before it becomes too expensive.

Response: Comment noted. Construction of Phase 1 of the cleanup action is planned to begin in the fall of 2012.

4.6 Commenter #6 (Frost, Brett)

Brett Frost submitted written comments to Ecology following the public meeting hosted by Ecology on March 15, 2011 (Commenter #6, Appendix A).

Comment #1: Mr. Frost stated support for the proposed cleanup by dredging of the Waterway. He expressed concern that waiting longer to begin the cleanup action could result in the cleanup becoming more expensive. Mr. Frost referenced the importance of the cleanup action and its support of good jobs, tax revenues, and economic concerns.

Response: Comment noted. Construction of Phase 1 of the cleanup action is planned to begin in the fall of 2012.

4.7 Commenter #7 (Hansen, Jim)

Jim Hansen submitted written comments to Ecology by electronic mail on March 14, 2011 (Commenter #7, Appendix A).

Comment #1: Mr. Hansen stated his preference for a cleanup alternative that includes 1) removal of the most toxic sediments with disposal in an upland landfill, 2) capping of less toxic sediments, 3) removal of the ASB with restoration of the natural shoreline, and 4) removal of the G-P dock and pile-supported structures with restoration of a natural shoreline. Mr. Hansen stated that Ecology's cleanup decision should not be based on cost-effectiveness.

Response: Ecology's selected remedy, including the updates contained in the proposed Amendment, are consistent with 1 and 2. Under the updated cleanup decision, the most contaminated sediments from the ASB and the Whatcom Waterway will be managed by removal and upland disposal in an off-site commercial landfill. The less contaminated sediments will be capped on-site, either in place or within the ASB disposal site.

Numbers 3 and 4 are land use decisions that are beyond the scope of Ecology's MTCA cleanup authority. We encourage you to contact the Port and City directly with these land use suggestions.

With regard to cost-effectiveness, Ecology's cleanup decisions are necessarily constrained by the MTCA, specifically WAC 173-340-360. This section of the regulation describes the minimum requirements and procedures for selecting cleanup actions. Included is a requirement that cleanup actions use permanent solutions to the maximum extent practicable. To determine whether a cleanup action uses permanent solutions to the maximum extent practicable, a disproportionate cost analysis is required. The proposed Amendment evaluates disposal in the ASB against the only other disposal option available, upland disposal. The evaluation is performed in accordance with these MTCA requirements.

4.8 Commenter #8 (Harris, Wendy)

Wendy Harris submitted written comments to Ecology by email on March 16, 2011 following the public meeting hosted by Ecology on March 15, 2011 (Commenter #8, Appendix A).

Comment #1: Ms. Harris expressed concern that the Amendment was not posted in the Site Register, because Ecology had suspended the publication of that document due to budget and hiring constraints. Ms. Harris was concerned that the procedures used were not consistent with the Public Participation Plan attached to the original Consent Decree, which included publication of public comment notices in the Site Register. Ms. Harris urged that Ecology withdraw the proposed Amendment.

Response: In response to your comment, Ecology resumed publication of the Site Register on March 24, 2011. A notice regarding the proposed Amendment was included. Also, to provide readers of the Site Register with a 30-day review time, the close of the public comment period was extended from April 11 to April 27. These actions satisfy the notification requirements and Ecology plans to move forward with the proposed Amendment.

4.9 Commenter #9 (Johnson, Tip)

Tip Johnson submitted written comments to Ecology by electronic mail on March 15, 2011 (Commenter #9, Appendix A).

Comment #1: Mr. Johnson stated that alternative uses for the ASB should have been considered as part of the Port's EIS process for the master plan.

Response: The proposed Amendment addresses the MTCA cleanup of the Whatcom Waterway Site, given planned land uses. Land use decisions and planning processes are beyond the scope of Ecology's MTCA cleanup authority.

We encourage you to contact the Port and City directly with these land use planning concerns.

Comment #2: Mr. Johnson recommended consideration of a multi-component cleanup and redevelopment alternative for the ASB incorporating 1) municipal sewage treatment within the ASB, 2) aeration-based treatment of wood waste containing sediments with discharge of the treated solids to the bay, and 3) subdivision of the ASB for treatment of sanitary wastewater, industrial wastewater, and stormwater. Mr. Johnson recommended filling of the ASB with contaminated sediments and subsequent construction of clarifiers for these various purposes.

Response: Land use decisions are beyond the scope of Ecology's MTCA cleanup authority. We encourage you to contact the Port and City directly with these land use suggestions.

4.10 Commenter #10 (King, James)

James King submitted written comments to Ecology following the public meeting hosted by Ecology on March 15, 2011 (Commenter #10, Appendix A).

Comment #1: Mr. King stated his approval for the cleanup approach described in the Amendment. Mr. King stated that the use of a higher-cost approach such as upland disposal is not needed. He favored initiation of the cleanup as soon as possible.

Response: Comment noted. Construction of Phase 1 of the cleanup action is planned to begin in the fall of 2012.

4.11 Commenter #11 (Munson, John)

John Munson submitted written comments to Ecology by electronic mail on April 27, 2011 (Commenter #11, Appendix A).

Comment #1: Mr. Munson stated his support for the cleanup approach as described in the Amendment. Mr. Munson referenced the economic benefits associated with providing depth in the waterway sufficient for operation of commercial trade at the Bellingham Shipping Terminal. Mr. Munson stated his support for moving as quickly as possible with the cleanup because cleanup standards could potentially change in the future.

Response: Comment noted. Construction of Phase 1 of the cleanup action is planned to begin in the fall of 2012.

4.12 Commenter #12 (People for Puget Sound)

Heather Trimm of People for Puget Sound submitted written comments to Ecology in a letter dated April 27, 2011 (Commenter #12, Appendix A).

Comment #1: Ms. Trimm stated that People for Puget Sound is opposed to the use of confined aquatic disposal as proposed in the Amendment. Ms. Trimm expressed concern that the full environmental impact had not been evaluated. She also expressed concern that the remedy would rely unreasonably on the will of future governmental entities to maintain the disposal site. She expressed concern that in developing the Amendment, Ecology had ignored potential natural stresses or real world complexities.

Response: A Final EIS was completed in 2000 and a Final Supplemental EIS was completed in 2007. The EIS documents evaluated a wide range of remedial alternatives, and the changes proposed under the Amendment fall within the range of alternatives evaluated.

With regard to maintenance of the Unit 8 disposal facility, the Consent Decree and the Amendment are legal documents that bind the Port, the City, DNR, and Meridian Pacific Highway LLC to implement the remedy as described including monitoring, institutional controls, and contingency actions. Ecology has the authority to undertake the actions required in the Consent Decree if the parties fail to perform them.

Concerning future natural stresses/real world complexities, see responses to Comments 3, 8, 9, and 10 below.

Comment #2: Ms. Trimm expressed her belief that the use of a Consent Decree Amendment was not an appropriate mechanism for documenting Ecology's decision regarding updates to the cleanup plan. She expressed a desire for a full consideration of cleanup alternatives in light of new information.

Response: Because changes to the existing Consent Decree/CAP are proposed only for certain areas of the Site, an amendment is the appropriate legal mechanism. Consent Decree amendments are common as the cleanup process progresses and additional information is gathered during remedial design.

Also, Ecology is not sure what is meant by full consideration of cleanup alternatives. Based upon new information, the material in Site Units 1A and 1B must be disposed of differently than originally planned. The only options available are upland disposal and disposal in Unit 8. These two options were fully evaluated in accordance with the MTCA, as presented in the proposed Amendment.

If the comment refers to revisiting cleanup alternatives for the entire Site, this is not warranted as Unit 8 disposal is not a cost-effective option for the entire Site. See 4.3, Comment #1.

Comment #3: Ms. Trimm expressed concern about the levels of contaminants that are proposed to be disposed within the ASB.

Response: Ecology acknowledges your concerns regarding the levels of contaminants that are proposed to be disposed within the ASB. At this time the mercury volume weighted average concentration is estimated to be 1.16 mg/kg and the dioxin/furan TEQ volume weighted average is estimated to be 32.3 ng/kg. Refined estimates and further documentation of the suitability of these materials for confined aquatic disposal will be provided in an EDR, which will be made available for public review and comment.

Comment #4: Ms. Trimm stated multiple concerns including 1) that Ecology had not developed a bioaccumulation screening level (BSL) for dioxin/furans, 2) that the existing BSL for mercury was not sufficiently protective, and 3) that sediment contamination has not been adequately characterized.

Response: Regarding dioxin/furans, the regulatory framework to address these compounds is still evolving. However, Ecology is unlikely to require the development of a BSL because these compounds typically exceed human health risk levels at concentrations below background levels. Therefore, in accordance with the MTCA, Ecology anticipates regulating these compounds based upon a background approach. For your information, Ecology recently completed a report on dioxin/furans in the surface sediments of Bellingham Bay. The report can be found at: <http://www.ecy.wa.gov/biblio/1103033.html>.

With respect to the mercury BSL, it was developed during the RI/FS process to be protective of subsistence fishing activities that could occur within Bellingham Bay. There have been no changes to the underlying information on which the BSL was based. The application of the BSL in the Consent Decree (i.e., application of the BSL on a point-by-point basis rather than as an area-wide average concentration limit) provides an added margin of safety.

The Site has been subject to multiple sampling events since 1996 and Ecology considers the contamination to be adequately characterized. However, Ecology will continue to review data adequacy as part of the design and permitting process. We encourage you to review and comment on the future EDR, which will include a compliance monitoring and contingency response plan.

Comment #5: In her comments, Ms. Trimm expressed concern regarding uncertainties associated with the application of the Dredge Material Management Program (DMMP) guidelines. She questioned whether further testing to evaluate DMMP suitability has been completed.

Response: Please see Section 1.2 of the proposed Amendment. The DMMP Guidelines were not applied in terms of conducting a formal suitability determination. Rather, based upon comparing the average dioxin/furan concentration of 33 ng/kg toxic equivalents (TEQ) for Units 1A/B to the 2007 to 2010 and the 2010 DMMP guideline values, Ecology concludes that these

sediments are unlikely to qualify for open water disposal. As a result, Ecology will not require additional testing (e.g., bioaccumulation testing) to further assess DMMP suitability.

Comment #6: In her comments Ms. Trimm asked what the institutional controls are, and she questioned how effective they will be over time. She questioned whether the 30-year monitoring timeframe is sufficient.

Response: The existing 2007 CAP provides a description of the types of monitoring (Section 6.3) and institutional controls (Section 6.4) anticipated for the Site. Compliance monitoring and contingency response plans will be developed as part of the Phase 1 and Phase 2 EDR documents, which will be made available for public review and comment. Institutional controls plans will be developed for Ecology review and approval following completion of each phase of the cleanup action. Final Institutional Control Plans will be placed on Ecology's web page for the Site.

At this time, Ecology anticipates use of the 30-year monitoring timeframe. However, as stated in Section 6.3 of the CAP, "additional monitoring events may be required and/or the term extended in the event that sediment areas are shown during physical and chemical monitoring to be unstable or to exhibit recontamination." This provision provides Ecology the ability to require additional monitoring.

Comment #7: Ms. Trimm stated her concern that weak political will and budget pressures may force governments to cut back and renege on their commitments, and that future pressures may prevent the CD signatories from completing the remedy as defined in the Amendment. She questioned how long the Unit 8 cap will last and whether it will need to be replaced.

Response: The Consent Decree and the Amendment are legal documents that bind the Port, the City, DNR, and Meridian Pacific Highway LLC to implement the remedy as described. Ecology has the authority to undertake the actions required in the Consent Decree if the parties fail to perform them.

The Unit 8 confined disposal facility cap will be designed to be permanent and not require replacement. Design assumptions and a compliance monitoring and contingency response plan will be included in the future EDR, which will be made available for public review and comment.

Comment #8: Ms. Trimm stated that Bellingham is located within an area (the Puget Sound region) prone to earthquakes and tsunamis.

Response: This is correct and the engineering design process for the cleanup action will include an evaluation of potential disturbance factors, including seismic events and tsunamis. The results of the evaluation will be included in the

EDR, which will be issued for public review and comment. The EDR will also include a compliance monitoring and contingency response plan to ensure that any significant disturbance is detected and corrected as necessary to maintain the integrity of the cleanup action.

Comment #9: Ms. Trimm stated her concern that placing a marina over the ASB disposal site could disturb disposed sediments through propeller wash, anchor drag, or sinking of boats in the marina. She expressed concern about the effectiveness of institutional controls under a marina land use scenario.

Response: The potential disturbance factors listed as well burrowing animals, pile driving, boat sinking/salvage, and periodic dredging will be evaluated in the engineering design process. The results of the evaluation will be included in the EDR, which will be issued for public review and comment. The EDR will also include a compliance monitoring and contingency response plan to ensure that any significant disturbance is detected and corrected as necessary to maintain the integrity of the cleanup action.

Ecology believes that designing the disposal facility in consideration of these disturbance factors, coupled with appropriate institutional controls, will result in long-term compliance with cleanup levels. Also see response to Comment #6 above.

Comment #10: Ms. Trimm stated that People for Puget Sound favors the use of dredging and upland disposal rather than confined aquatic disposal as proposed under the Amendment. She stated her concern that the disproportionate cost analysis performed by Ecology did not sufficiently consider the potential costs associated with maintenance, repair, and potential removal of the confined disposal facility.

Response: Your preference for the use of dredging and upland disposal rather than confined aquatic disposal is noted. However, the MTCA required disproportionate cost analysis presented in Section 5 of the proposed Amendment shows that confined aquatic disposal in Unit 8 is permanent to the maximum extent practicable. Therefore, it is the preferred cleanup option.

With regard to costs, the Unit 8 Confined Aquatic Disposal (CAD) will be designed to be a permanent facility without the need for repair, maintenance, or removal. However, the cost estimates shown in Appendix B-1 of the proposed Amendment include a contingency in the event that some repair and maintenance is needed.

Comment #11: Ms. Trimm stated her concern that methyl mercury is present in Site sediments. She requested a specific study/evaluation of the food chain effects of methyl mercury in Bellingham Bay and Puget Sound. Ms. Trimm felt that the PRDI Data Report provided a substantial amount of data but did not provide sufficient commentary regarding the implications of the data. She expressed her concern that there was no plan

to estimate bioaccumulation factors expressing the ratio of receptor mercury content or water mercury concentrations to mercury concentrations in the sediments. Ms. Trimm also expressed concerns about whether the newly collected data supported the assumptions that new sediment will effectively cover the historically contaminated sediments.

Response: As described in the PRDI Data Report, methyl mercury has been assessed within the Site. As measured by relative methyl mercury (percentage of total mercury), all relative methyl mercury concentrations were less than 2 percent. This is consistent with typical literature values.

The relationship between mercury concentrations in biota and those in sediments was evaluated as part of the RI/FS process, during development of the BSL for mercury. The RI/FS also included evaluations of mercury within the water column, and additional pore-water testing for mercury was performed during the PRDI activities. None of these data change the previous biota/sediment relationships as evaluated during the RI/FS development of the BSL.

Tissue mercury monitoring will be a required element of the compliance monitoring and contingency response plan prepared for public review as part of the future EDR. This monitoring will provide a direct endpoint by which the success if the cleanup action can be measured.

The recently collected data described in the PRDI Data Report continue to support the conclusions of the RI/FS that most areas of the Site are subject to ongoing natural recovery. Areas where limitations to these processes occur (e.g., Unit 5B) are addressed through active cleanup.

Comment #12: Ms. Trimm commended the Port's recent monitoring program, specifically the testing performed for dioxin/furans in the Unit 1 subsurface sediments.

Response: Comment noted.

4.13 Commenter #13 (Piper, Scott)

Scott Piper submitted written comments to Ecology by electronic mail dated April 14, 2011 and in a supplemental email dated April 17 (Commenter #13, Appendix A).

Comment #1: Mr. Piper provided comments relating to public access to the shoreline. He stated his desire to incorporate into the redevelopment of the ASB a 30-yard wide green space, a bike path loop, a bridge across the marina access channel, and a large public access area equal to half of the ASB footprint. Mr. Piper stated a desire for a wider marina breakwater to support public access measures.

Response: Land use decisions are beyond the scope of Ecology's MTCA cleanup authority. We encourage you to contact the Port and City directly with these land use suggestions.

Comment #2: Mr. Piper expressed concern that any carcinogenic materials such as dioxin/furans and mercury should be precluded from marina waters or anywhere near public space.

Response: In accordance with the MTCA, the Site cleanup will eliminate exposure of people and the environment to potentially harmful levels of contaminants, including mercury, a non-carcinogenic compound. Current and future land uses were considered in developing the cleanup options presented and evaluated in the Amendment.

If the comment is stating a preference for the upland disposal option rather than Unit 8 disposal, please see Section 5 of the proposed Amendment. The evaluation presented in this section was performed in accordance with the requirements of the MTCA and disposal in the ASB was found to be the preferred option.

Comment #3: Mr. Piper stated his preference that sediments containing elevated dioxin/furan concentrations be managed by upland disposal rather than disposal beneath the ASB.

Response: Your preference for the use of upland disposal is noted. See response to Comment #2.

Comment #4: Mr. Piper questioned whether the ASB disposal option was less costly than upland disposal and stated that cost figures should have been presented in the CD Amendment documentation. He then stated his preference for upland disposal even if this approach is more expensive.

Response: Detailed cost estimates are provided in Exhibit 1, Appendix B-1, of the proposed Amendment

Your stated preference for the use of upland disposal regardless of cost is noted. See response to Comment #2.

Comment #5: Mr. Piper acknowledged that the sediments could not be reused as upland structural fill. He then recommended that the sediments be reused in the upland as non-structural fill, rather than be disposed within the ASB.

Response: Reuse of the sediments as non-structural fill was considered. However, there is no large area of land (with appropriate land uses not requiring structural fill) nearby that is currently available.

Comment #6: Mr. Piper stated his preference that the dredged sediments be managed by upland disposal, using the same approach as for the ASB sludges. He alternately recommended that the sediments could be reused upland as non-structural upland fill.

Response: Regarding upland disposal, see response to Comment #2. Regarding the reuse of the sediments as non-structural fill, see response to Comment #5.

Comment #7: Mr. Piper stated his opposition to disposal of sediments beneath the ASB and future marina. He stated his preference for placement of clean sand beneath the future marina.

Response: Your opposition to disposal of contaminated sediments beneath the ASB and future marina is noted.

Under the proposed Amendment, the sediments disposed within the ASB are slated to be covered by a 3-foot nominal thickness clean sand sediment cap. The exact thickness and composition of the cap will be determined during engineering design based upon an evaluation of a number of factors including contaminant flux and anticipated anthropogenic disturbances such as prop wash, anchor drag, and other physical disturbances. These design evaluations will be presented in a Phase 2 EDR, which will be provided for public review and comment. The EDR will also include a compliance monitoring and contingency response plan to ensure that any significant disturbance is detected and corrected as necessary to maintain the integrity of the sand cap.

Comment #8: Mr. Piper expressed concern that the disposal of sediments beneath the ASB could make the ASB berm less stable, particularly during an earthquake, and especially since the sediments are not considered suitable for upland structural reuse.

Response: An evaluation of potential earthquake hazards will be presented in a Phase 2 EDR, which will be made available for public review and comment. The evaluation will consider the properties of the sediments and of the proposed disposal site. The requirements for upland structural fill are different than those that may apply to the creation of a sediment disposal site beneath the ASB.

Comment #9: Mr. Piper stated that the potential for an earthquake or tsunami should be considered.

Response: The engineering design process will include an evaluation of potential disturbance factors, including seismic events and tsunamis. The results of the evaluation will be included in the EDR, which will be issued for public review and comment. The EDR will also include a compliance monitoring and contingency response plan to ensure that any significant disturbance is detected and corrected as necessary to maintain the integrity of the cleanup sand cap.

Comment #10: Mr. Piper stated that the EIS for the project should be revised due to the cleanup remedy changes described in the amendment, and potential earthquake and tsunami hazardous should be considered as part of the revised EIS.

Response: A Final EIS was completed in 2000 and a Final Supplemental EIS was completed in 2007. The EIS documents evaluated a wide range of remedial alternatives and the changes proposed under the Amendment fall within the range of alternatives evaluated.

These documents considered potential earthquake and tsunami risks for the project area. Therefore no additional State Environmental Policy Act (SEPA) review is required. Also see response to Comment #9.

Comment #11: Mr. Piper expressed concern that the removal of the ASB sludges as described in the original Consent Decree could reduce the stability of the ASB berms during an earthquake, and recommended that additional backfill be placed to prevent this from occurring.

Response: See response to Comment #9.

Comment #12: Mr. Piper stated that the clean sands present beneath the ASB should not be removed, because the clean sand provides a better habitat for aquatic life than contaminated sediment.

Response: As described in the response to Comment #7, contaminated sediments disposed of in the ASB will be capped with clean sandy sediments, providing improved habitat for sediment-dwelling organisms.

Comment #13: Mr. Piper agreed with Ecology's decision, as reflected in the proposed Amendment, that the sediments dredged from portions of the Outer Waterway should not be managed by open water disposal.

Response: Comment noted.

Comment #14: Mr. Piper agreed that the sediments dredged from the Outer Waterway should not be used for upland structural fill beneath roads or buildings.

Response: Comment noted.

Comment #15: Mr. Piper stated his preference for use of a new upland disposal site. He stated that the cleanup should be delayed if necessary to enable the purchase and development of a new upland disposal site, to be constructed with an appropriate containment system to provide for long-term facility maintenance.

Response: Development of new upland disposal facilities has been evaluated on a conceptual level by Ecology for sediment cleanup sites throughout Puget Sound.

Our evaluation indicates that the cost of developing new upland disposal facilities is about the same as using existing facilities. Siting new facilities also introduces cost and schedule uncertainties because it can be difficult to find an available and appropriate location, and to obtain the required permits.

Comment #16: Mr. Piper stated his concern that the ASB disposal site will not be safe during a significant earthquake and/or tsunami event, and that the contained sediments could be spread around Bellingham Bay as a result.

Response: See response to Comment #9.

4.14 Commenter #14 (Postlewait, Randy)

Randy Postlewait submitted written comments to Ecology following the public meeting hosted by Ecology on March 15, 2011 (Commenter #14, Appendix A).

Comment #1: Mr. Postlewait stated his approval for the cleanup approach described in the Amendment. Mr. Postlewait stated that the use of a higher-cost approach such as upland disposal is not needed. He favored initiation of the cleanup as soon as possible.

Response: Comment noted. Construction of Phase 1 of the cleanup action is planned to begin in the fall of 2012.

4.15 Commenter #15 (RE Sources)

Wendy Steffensen of RE Sources submitted written comments to Ecology in a letter dated April 26, 2011 (Commenter #15, Appendix A).

Comment #1: Ms. Steffensen stated her belief that the Amendment was not an appropriate mechanism to modify the Consent Decree and CAP. She requested that Ecology's update to the remedy decision should be further vetted with the public through an amendment to the Feasibility Study.

Response: Please see 4.12, response to Comment #2.

Comment #2: Ms. Steffensen expressed concern that confined aquatic disposal sites are less protective than upland disposal, because upland disposal removes contamination from the water and makes it less likely to reenter the water column and food chain.

Response: Ecology agrees that disposal of the sediments in the ASB has a lower degree of protectiveness, permanence, and long-term effectiveness than upland disposal. This was reflected in the MTCA disproportionate cost analysis presented in the proposed Amendment. However, the analysis found disposal within the ASB to be permanent to the maximum extent practicable, and therefore the preferred cleanup option.

Comment #3: Ms. Steffensen stated that the marina site will be more protected than other potential confined aquatic disposal locations. However, she expressed concerns regarding how the contained sediments will be protected from disturbance by wave erosion, propeller wash, burrowing animals, and cap penetration by marina pilings.

Response: Please see 4.12, Comment #9.

Comment #4: Ms. Steffensen expressed concern regarding the concentrations of dioxin and mercury in the sediments to be placed in the CAD. She stated her belief that the limitations on sediments left in-water or placed in the CAD should be based on BSL for mercury and on a new BSL for dioxin/furans.

Response: As described in Sections 3.1 and 3.2 of the existing 2007 Consent Decree/CAP, the mercury bioaccumulation screening level is the maximum concentration that can be present within the upper 12 centimeters of sediment (bioactive zone) to be protective of seafood consumers in high-consuming populations. The BSL does not apply to buried sediments under caps or natural recovery areas where there is no exposure pathway. Evaluations of the protectiveness of sediment caps and the cover material to be placed over the confined disposal area within the ASB will be documented in the EDR for each phase of the cleanup action. The EDRs will be provided for public review and comment.

Comment #5: Ms. Steffensen requested that a BSL be developed for dioxin in sediments.

Response: Ecology does not anticipate developing a dioxin/furan BSL. Please see response to 4.12, Comment #4.

Comment #6: Ms. Steffensen stated her belief that the BSL for mercury should be re-evaluated, and she cited previous comments that RE Sources had made during 2006 as part of the public review of the RI/FS. Ms. Steffensen also provided recent Ecology summary information showing fish consumption rate survey data from various studies for high exposure population groups.

Response: Please see response to 4.12, Comment #4.

Comment #7: Ms. Steffensen expressed her concurrence that the removal and placement of the Unit 5B sediments in the lagoon is superior to the original remedy (capping in place) for these sediments. However, she stated her belief that disposal within the ASB is not the best place because dioxin values had not been directly tested, and a mercury subsurface sediment sample exceeds the BSL. In her closing comments she specifically requested a better characterization of Unit 5B sediments.

Response: While dioxin/furan concentrations have not been directly measured within the Unit 5B sediments, dioxin/furan data for subsurface sediments has been

collected from areas adjacent to Unit 5B. The estimated dioxin/furan composition of the Unit 5B sediments (which represent a small portion of the total sediments to be disposed within the ASB) is based on the highest of the measured concentrations in adjacent areas.

With regard to only allowing material below BSLs to be disposed in Unit 8, see response to Comment #4 above. As a result, Ecology does not believe further characterization of this area of the Site is necessary.

Comment #8: Ms. Steffensen expressed concern about the ability to successfully implement institutional controls for the ASB disposal site. Specifically she expressed concern regarding the placement of marina pilings through the sediment cap. Ms. Steffensen requested more information about how institutional controls and piling placement will work together.

Response: Please see 4.12, Comment #9. Maintenance of the integrity of the cap will be a required element of the institutional controls for this area of the Site. With respect to pilings, Ecology anticipates that they will be installed via vibratory hammer, which may locally displace the cap material downward and laterally but should not result in bringing contaminated buried sediments to the surface. However, post-placement monitoring will be required to verify the integrity of the cap. Corrective actions will be taken as necessary.

Comment #9: Ms. Steffensen expressed concern that the site-specific BSL is not protective. She stated her understanding that it is not based on seafood consumption levels for subsistence fishermen. She also expressed concern about the quality of the statistical relationship in the data sets that were used during BSL development.

Response: As discussed in Section 4.3 of the 2006 Supplemental RI Report, the BSL addresses human health protection from bioaccumulation of mercury. SMS cleanup standards, including application of chemical and biological testing, ensure protection of benthic organisms living in the sediment. The BSL was developed initially in the 2000 RI/FS using standard risk-assessment processes. It was reviewed by Ecology during the 2006 Supplemental RI/FS process, and during development of Ecology's cleanup decision as documented in the 2007 Consent Decree. Ecology continues to conclude that the BSL provides a valid estimate of the area-wide sediment concentrations that are protective of seafood consumption by high consuming populations. It was developed using conservative (i.e., protective) assumptions. Additionally, Ecology has applied this area-wide value in a more stringent manner, applying it on a point-by-point basis. This application of the BSL provides added protection.

With respect to subsistence fisher seafood consumption levels, these were taken into account in development of the BSL. Seafood consumption rates used in the development of the BSL were based on a targeted fish consumption study of tribal seafood consumption rates for the Tulalip and Squaxin tribes (Toy et al, 1996).

That study remains one of the key regional studies for current seafood consumption rates in Native American populations.

With respect to the statistical relationship between sediment and tissue data, the BSL development included paired data, with the most important data set being the Dungeness crab tissue data collected from Bellingham Bay. The analysis included multiple studies performed by academic researchers and regulatory agencies including Ecology. The data were analyzed using standard linear regression techniques. Average values from each of the multiple studies were plotted, and the linear regression was performed using a best fit line. The regression outputs were then used along with other exposure and toxicity data to assess sediment concentrations that would be protective of human receptors. The regression analysis produced a strong correlation between sediment and tissue mercury levels in crab, and is suitable for use in BSL development. Because the analysis was performed using paired endpoints (i.e., sediment total mercury and tissue total mercury) and because all tissue mercury was assumed to represent methyl mercury for purposes of BSL development, the resultant BSL is considered protective.

Comment #10: Ms. Steffensen expressed general concern regarding potential health effects of mercury, given its status as a persistent bioaccumulative compound, the potential for mercury to form methyl mercury compounds under certain conditions, and the potential health effects of mercury and methyl mercury compounds as documented in studies in animals and humans in the scientific literature.

Response: Ecology shares your concerns about mercury in the environment, especially in light of the stated risks that mercury poses to human health and the environment. The State of Washington has promulgated cleanup standards for various media in order to protect both human health and the environment. These cleanup standards apply equally to future and current protection of human health and the environment. The cleanup of Whatcom Waterway is one of Ecology's highest priorities in part because of the presence of mercury as a principal contaminant. Ecology has considered the various potential exposure pathways, including ecological exposures and consumption of seafood by high-consuming populations, in developing the BSL and other cleanup levels for application to the Whatcom Waterway Site.

Comment #11: Ms. Steffensen discussed the crab tissue data collected from the Whatcom Waterway site between 1991 and 1997, focusing on reported crab muscle tissue mercury concentrations measured by Ecology between 0.10 and 0.211 mg/kg during the agency's 1997 study. She stated that more recent sampling performed during Log Pond monitoring between 2001 and 2005 showed lower concentrations. She summarized her interpretation of certain EPA guidance developed for use in setting seafood advisories, and provided her interpretation of exposure risks if crab were consumed at the rate estimated in the Tulalip Squaxin study for total seafood (from all types and sources).

Response: The crab tissue mercury concentrations reported between 1991 and 1997 for Bellingham Bay ranged from a low 0.027 mg/kg to a high of 0.211 mg/kg. More recent sampling following implementation of the Interim Action in the Log Pond and closure of the G-P Chlor-Alkali plant has shown lower concentrations, with the sampling in the Log Pond showing an average concentration of approximately 0.024 mg/kg, which is similar to the measured concentrations in clean reference samples collected from Portage Bay (average concentration 0.028 mg/kg).

The fish consumption rates used in the BSL development included the 90th percentile rates from the Tulalip Squaxin study and is the higher of the rates measured for adults and children. The seafood consumption value referenced in the comment is for total seafood from all types and sources and is not applicable to consumption of crab tissue only. The BSL takes into account consumption rates for specific types of seafood based on specific data obtained from the study authors during BSL development.

The Whatcom County Health Department (WCHD) is responsible for reviewing seafood tissue data and determining whether a seafood advisory is appropriate. During the RI/FS process, the WCHD submitted a comment letter stating that the BSL was developed using appropriate methods, and that it provides a reasonable and justifiable estimate of a health-based screening level.

Comment #12: Ms. Steffensen stated that the more recent crab tissue monitoring performed in Bellingham Bay showed apparent decreasing mercury concentrations. She stated her opinion that additional sampling would be required to show that this decrease is statistically significant.

Response: The crab tissue mercury concentrations reported between 1991 and 1997 for Bellingham Bay ranged from a low 0.027 mg/kg to a high of 0.211 mg/kg. More recent sampling following implementation of the Interim Action in the Log Pond and closure of the G-P Chlor-Alkali plant has shown lower concentrations, with the sampling in the Log Pond showing an average concentration of approximately 0.024 mg/kg, which is not significantly different from the measured concentrations in clean reference samples collected from Portage Bay (average concentration 0.028 mg/kg).

Additional tissue monitoring will be performed following implementation of the cleanup action as generally described in Section 6.3 of the CAP. Monitoring details will be described in compliance monitoring and contingency response plans developed as part of the future Phase 1 and Phase 2 EDR documents, which will be made available for public review and comment.

Comment #13: Ms. Steffensen stated that the multi-step process used to develop the BSL “makes some sense.” But she stated her desire for a final cleanup standard more restrictive than the 1.2 mg/kg value of the BSL as determined by Ecology.

Response: With respect to the mercury BSL, Ecology considers the BSL to be protective as it has been applied to the Site. The BSL was developed during the RI/FS process to be protective of subsistence fishing activities that could occur within Bellingham Bay. There have been no changes to the underlying information on which the BSL was based. The application of the BSL in the Consent Decree (i.e., application of the BSL on a point-by-point basis rather than as an area-wide average concentration limit) provides an added margin of safety.

Comment #14: Ms. Steffensen expressed concern that the relationship between sediment and tissue mercury concentrations can be complex. She cited a 2001 research paper presenting tests performed with an estuarine amphipod as an illustration of factors that can affect mercury bioavailability.

Response: Ecology agrees that observed mercury exposures in aquatic food webs are the result of multiple factors, and that total mercury concentrations in sediment are not the only factor involved. The other factors can result in differences in exposure risk, particularly between different sites where these variables are not controlled. It was for this reason that site-specific data were used for development of a bioaccumulation screening level. The use of site-specific data controls many of the key variables (e.g., aquatic and sediment organic matter concentrations, sediment stability, geochemical factors, and site-specific food web characteristics), that can influence mercury bioavailability in sediments. This is consistent with the cautionary discussion contained in the cited 2001 research paper. The paper encouraged decisions about mercury exposures to be based on more than just total sediment mercury, including use of actual food web monitoring data. This is what has been done by using site-specific food web data in development of the BSL.

Comment #15: Ms. Steffensen discussed the regression coefficients for the sediment/tissue data sets used in development of the BSL, including crab, clams, mussels, and bottomfish, which varied between 0.73 and 0.04 respectively. She expressed concern about the low correlation for the clams, mussels, and bottomfish. Likewise she expressed concern about the substitution of crab regression data for bottomfish in developing the BSL.

Response: With respect to the tissue data sets, the strongest correlations between bulk sediment and tissue concentrations were observed for Dungeness crabs. The resulting R^2 value (0.73) indicates a relatively strong relationship between crab tissue data and sediment mercury concentrations. This correlation was sufficient to use the data in development of the BSL. The correlations were lower for the clams and mussels, and were substantially lower for bottomfish. For this reason a BSL was used that substituted the crab regression outputs for the bottomfish data.

As documented in the 2000 RI/FS and in the materials attached to the 2006 RI/FS, this substitution method for the bottomfish results in a more stringent BSL estimate and will tend to over-predict potential seafood mercury concentrations. Use of alternative methods would have resulted in higher (i.e., less-stringent) BSL values.

Comment #16: Ms. Steffensen expressed concern about variability in the tissue data used to develop the BSL, referencing the tissue mercury concentrations observed in two of the thirteen tissue samples collected during Ecology's 1997 tissue study. She argued that the mercury concentrations observed in these two individual samples invalidate the overall correlation analysis. She also argued that the lower tissue concentrations observed in clams collected from the Eagle Harbor site, from site areas with sediment mercury concentrations in excess of 1.2 mg/kg, calls into question the Bellingham Bay BSL because those tissue samples did not exhibit tissue concentrations in excess of 0.18 mg/kg.

Response: The BSL development took into account multiple crab data sets in the correlation analysis. The individual samples referenced in the comment were part of the data analysis. The other samples in that same sampling event were substantially lower in concentration. All data were used in the regression analysis, which is appropriate to the data analysis method. Uncertainties of the analysis were discussed in the RI/FS and were considered in applying the resulting BSL to the Site cleanup decision.

The lower observed clam tissue data at a given concentration are consistent with the lower tissue-specific regression findings for these species. Based on observed data, it is not appropriate to apply the crab regression analysis outputs to the clam and mussel data set, as those two regression analyses had substantially different slopes, differing by over an order of magnitude.

Comment #17: Ms. Steffensen stated her concern that the BSL was developed using paired sediment/tissue data over a range of concentrations from 0.10 to 0.91 mg/kg, and that extrapolation is required to extend the analysis to the resulting 1.2 mg/kg. She expressed concern as to whether the relationship between sediment and tissue would be different (i.e., due to a biphasic relationship) above the 1.2 mg/kg value.

Response: There is no evidence of a non-linear or biphasic relationship in the available crab tissue data, or that the extrapolation of the observed regression data between 0.91 and 1.2 mg/kg would under-estimate observed tissue concentrations. In fact the data available for red rock crab suggest that the tissue/sediment relationship is conserved over concentrations significantly higher than 1.2 mg/kg. That data set included home-range sediment concentrations up to 5.9 mg/kg. Use of the existing regression analysis to develop a BSL at the 1.2 mg/kg concentration is appropriate.

Comment #18: Ms. Steffensen expressed concern that the BSL was developed using crab data from multiple locations within Bellingham Bay, rather than exclusively with crab data collected from within the Whatcom Waterway Site. She also expressed concern that the hardshell clam data are inappropriate for use since that data set included additional data from outside of Bellingham Bay.

Response: It would not be appropriate to use crab data from solely within the Site boundary to develop a regression analysis, given that the crab home range is larger than the Site boundary (i.e., the data could be used to develop a predictive ratio, but not to test the linearity of the relationship over multiple concentrations). These data from within the same bay are site-specific for the purposes of the analysis performed, and control for the variables specific to Bellingham Bay (e.g., aquatic and sediment organic matter concentrations, sediment stability, geochemical factors and site-specific food web characteristics) that can influence mercury bioavailability in sediments.

The use of clam tissue data from both within from outside of Bellingham Bay is appropriate given the available data sets. The overall regression analysis as conducted tends to over-predict observed concentrations in the clam samples collected from within Bellingham Bay, emphasizing the conservatism incorporated into the analysis.

Comment #19: Ms. Steffensen expressed her opinion that the crab tissue regressions should have been performed with all individual tissue results being plotted separately, rather than the tissue data from each study and home range area being plotted as the study average result. She expressed her opinion that there was no reason to favor the averaging method over the individual result method.

Response: Depending on how the crab data are analyzed, there can be slight differences in the outcome of the regression analysis. However, the differences are not as great as referenced in the comment. As can be shown using the data provided in the 2000 RI/FS and attached to the 2006 Supplemental RI/FS the difference in predicted tissue concentration at a given sediment concentration are only +/-8% if one method is used over the other. For example, if the data are plotted using each method and the regression outputs are used to predict a tissue concentration at a given sediment mercury concentration (e.g., a sediment concentration of 0.59 mg/kg produces estimated tissue concentrations of 0.124 mg/kg compared to 0.115 mg/kg) the resulting predicted values are not significantly different given significant digits and the other accuracy and precision issues associated with the analytical methods and other study variables. Further, there are reasons that the average study result was used in favor of the discrete results for the regression analysis. Specifically, this method was used to account for potential uncontrolled variables between the different studies, and to dampen the potential bias introduced by the fact that each study had different sample numbers. Otherwise, a single study with six collected crabs would be weighted more heavily in the analysis than five individual studies with one sample each,

even though the results from the six-crab study could have been subject to a single, undetected unidirectional bias. The regression analysis method used is appropriate, given the overall data analysis methods and the way in which uncertainties have been taken into account. As discussed in our other comment responses, the application of the BSL in the Consent Decree (i.e., application of the BSL on a point-by-point basis rather than as an area-wide average concentration limit) provides an added margin of safety.

Comment #20: Ms. Steffensen stated her belief that the BSL was developed based on a seafood consumption rate of 70 g/day (for a 70 kg person), and recommended use of values ranging from 133 to 173 g/day (for a 70 kg person).

Response: The BSL was developed using an overall fish (not just crab) consumption rate within the range recommended. The overall fish consumption rate used was equivalent to 173 g/day for a 70 kg person, consistent with the findings of the tribal seafood consumption study used (Toy et. al, 1996).

Comment #21: Ms. Steffensen expressed concern that potential mercury exposures associated with salmon and pelagic fish were not taken into account when developing the BSL.

Response: As discussed in the documentation accompanying the BSL, the salmon and pelagic fish were not considered as part of the BSL development because these fish do not have sufficient exposures within the Bay (due to their life cycles, migration patterns and feeding behavior) to warrant their inclusion. Concentrations of mercury in salmon from Bellingham Bay and the Nooksack River have been shown to contain mercury levels not significantly different from salmon collected in areas free of anthropogenic mercury impacts (e.g., Skagit River or Alaska salmon). The BSL development was appropriately based on seafood potentially affected by the Site contamination, and using subsistence-level seafood consumption rates based on tribal seafood consumption surveys.

Comment #22: Ms. Steffensen expressed concern that the tissue-specific seafood consumption values used for the BSL development in the 2000 RI/FS were not available in the original published version of the Toy et al (1996) seafood consumption study (which presented aggregate values).

Response: As cited in the 2000 RI/FS and in the documentation attached to the 2006 Supplemental RI/FS, the specific consumption data for bottomfish, crab, and clams/mussels were obtained from the Toy et. al (1996) study authors and were used directly in the BSL development process.

Comment #23: Ms. Steffensen argued that the crab data should be used to develop a BSL under the assumption that tribal fishers consume 173 grams per day solely of crab.

Response: A crab consumption rate of 173 grams per day would be inconsistent with published studies, by a wide margin. This is an appropriate overall consumption rate, see response to Comment #20 above.

Comment #24: Ms. Steffensen disputed the use of the word “conservative” when discussing the BSL-development assumption that 100% of the mercury present in seafood was present as methyl mercury. In supporting this statement she referenced an individual study published in 1992 that estimated that most mercury in different types of seafood was present as methyl mercury.

Response: Ecology agrees that the majority of mercury present in most seafood tends to be present as methyl mercury. However, the reported proportion of mercury present in seafood as methyl mercury varies from study to study. The use of a 100% assumption for this proportion can appropriately be labeled as conservative as it is at the high end of the range of potential values.

Comment #25: Ms. Steffensen disputed the use of the word “conservative” with respect to the BSL-development assumption that 100% of seafood consumption is derived from the Whatcom Waterway Site. She argued that the exclusion of salmon and pelagic fish from the analysis invalidated this statement.

Response: As discussed in the documentation accompanying the BSL, the salmon and pelagic fish were not considered as part of the BSL development because these fish do not have sufficient exposures within the Bay to warrant their inclusion (see response to Comment #21). The BSL development was appropriately based on seafood potentially affected by the Site contamination, and using current subsistence-level seafood consumption rates based on targeted, tribal seafood consumption surveys. For these seafood types, 100% of the seafood was assumed to be gathered from within the Site. The use of a 100% assumption for this proportion can appropriately be labeled as conservative as it is at the high end of the range of potential values. This value is conservative in that it assumes that no seafood of this type is obtained from other areas of Bellingham Bay, from areas outside of Bellingham Bay, or from seafood purchases from other areas.

Comment #26: Ms. Steffensen repeated her previous statement that the crab data should be used to develop a BSL under the assumption that tribal fishers consume 173 grams per day of crab.

Response: Please see response to Comment #23 above.

Comment #27: Ms. Steffensen expressed concern that the data set used to model the BSL was a small data set with limited statistical power. She stated that the uncertainty associated with the use of a small data set should be expressed.

Response: The data used to develop the BSL were clearly presented, along with information useful in describing the variability of the data and associated regression analyses. A larger data set could have been developed by using data from other areas, but site-specific data were prioritized where available, consistent with best available science. An extensive uncertainty discussion was included in the 2000 RI/FS.

As discussed in our other comment responses, the application of the BSL in the Consent Decree (i.e., application of the BSL on a point-by-point basis rather than as an area-wide average concentration limit) provides an added margin of safety.

Additional monitoring will be performed following implementation of the cleanup action as generally described in Section 6.3 of the CAP. Monitoring details will be described in compliance monitoring and contingency response plans developed as part of the future Phase 1 and Phase 2 EDR documents, which will be made available for public review and comment.

Comment #28: Ms. Steffensen provided a copy of an Ecology publication emphasizing the importance of considering subsistence fisher populations in evaluations of potential health risks associated with seafood consumption. That documentation included citations to the Toy et al study, which was used in the original development of the BSL.

Response: The 1996 Toy et al. study continues to be relied upon by agencies and researchers as a useful estimate of current tribal fishing behaviors in the Pacific Northwest. Since publication of the 1996 study, some additional studies have been performed with other tribes and high-consuming populations. However, the values developed in the original Toy study continue to be within the range considered reasonable in estimating current seafood consumption rates for high-consuming populations.

As discussed in our other comment responses, the application of the BSL in the Consent Decree (i.e., application of the BSL on a point-by-point basis rather than as an area-wide average concentration limit) provides an added margin of safety.

4.16 Commenter #16 (Ringenbach, Dean)

Dean Ringenbach submitted written comments to Ecology following the public meeting hosted by Ecology on March 15, 2011 (Commenter #16, Appendix A).

Comment #1: Mr. Ringenbach stated his support for Ecology's amended cleanup plan, citing concerns about the costs of the original cleanup approach.

Response: Comment noted.

4.17 Commenter #17 (Rohde, LeRoy)

LeRoy Rohde submitted written comments to Ecology following the public meeting hosted by Ecology on March 15, 2011 (Commenter #17, Appendix A).

Comment #1: Mr. Rohde stated support for the proposed cleanup as described in the Amendment. He stated that the dredging and cleanup of the Whatcom Waterway is key to safeguarding Bellingham Bay, and to the Port's ability to compete for cargo shipping business. Mr. Rohde stated that utilization of the ASB for disposal of sediments from the waterway provides cost savings to taxpayers. Mr. Rohde stated his hope that the Amendment and the cleanup will both get underway.

Response: Comment noted. Construction of Phase 1 of the cleanup action is planned to begin in the fall of 2012.

4.18 Commenter #18 (Schmidt, Joe)

Joe Schmidt submitted written comments to Ecology by electronic mail dated April 10, 2011 (Commenter #18, Appendix A).

Comment #1: Mr. Schmidt stated that the cleanup of the Whatcom Waterway should move forward immediately to avoid further increases in cost and impacts to Whatcom County taxpayers.

Response: Comment noted. Construction of Phase 1 of the cleanup action is planned to begin in the fall of 2012.

4.19 Commenter #19 (Streib, Darol)

Darol Streib submitted written comments to Ecology in a letter received by Ecology April 26, 2011 (Commenter #19, Appendix A).

Comment #1: Mr. Streib stated his preference for a remedy using disposal of sediments within the ASB, but using a nearshore confined disposal (i.e., upland fill) approach rather than a confined aquatic disposal approach as in the Amendment.

Response: See 4.2, response to Comment #1.

Comment #2: Mr. Streib stated that multiple benefits could be achieved using an upland fill approach within the ASB (rather than a confined aquatic disposal approach), including 1) maximizing disposal capacity through sediment consolidation, 2) exclusion of infiltrating rainwater from the fill using a top liner, and 3) allowance for installation of a liner and groundwater extraction wells to address potential fill leachate.

Response: See 4.2, response to Comment #1.

Comment #3: Mr. Streib also stated his concerns that using a CAD approach, sediment contaminants could be spread due to 1) tidal flushing of the marina basin, 2)

anthropogenic disturbance from marina related uses, and 3) leakage of contaminants into surface waters.

Response: Under the proposed Amendment, the sediments disposed within the ASB are slated to be covered by a 3-foot nominal thickness clean sand sediment cap. However, the exact thickness and composition of the cap will be determined during engineering design based upon an evaluation of a number of factors including contaminant flux and anticipated anthropogenic disturbances such as prop wash, anchor drag, or other physical disturbances. These design evaluations will be presented in the Phase 2 EDR, which will be provided for public review and comment.

4.20 Commenter #20 (Timmer, William)

William Timmer submitted written comments to Ecology following the public meeting hosted by Ecology on March 15, 2011 (Commenter #20, Appendix A).

Comment #1: Mr. Timmer stated support for the proposed cleanup as described in the Amendment, citing concerns about the costs of the original cleanup approach. He stated that the dredging and cleanup needs to start as soon as possible, and that Ecology's proposed plan will do that.

Response: Comment noted. Construction of Phase 1 of the cleanup action is planned to begin in the fall of 2012.

4.21 Commenter #21 (Williams, Darren)

Darren Williams submitted written comments to Ecology by electronic mail dated April 8, 2011 (Commenter #21, Appendix A).

Comment #1: Mr. Williams stated support for the proposed cleanup as described in the Amendment as an appropriate way to address sediments that are no longer suitable for open-water disposal due to elevated dioxin/furan levels. Mr. Williams emphasized that the cleanup should move forward as soon as possible to avoid increases in cost. He stated that dredging at the Bellingham Shipping Terminal is required in order for it to remain competitive in the shipping market.

Response: Comment noted. Construction of Phase 1 of the cleanup action is planned to begin in the fall of 2012.



Comment Form

**Whatcom Waterway Consent Decree
First Amendment**

Comments must be received by 5 p.m. April 11, 2011

Thank you for participating in today's meeting. If you wish to submit a written comment, you may use this form. **Please place your comment form in the Comment Box before you leave.** You may also mail this form to: Department of Ecology, attention Lucy McInerney, 3190 160th Ave SE, Bellevue, WA 98008 or e-mail your comments to Lucy McInerney at lucy.mcinerney@ecy.wa.gov. Please indicate the Whatcom Waterway Site in your subject line.

Ecology will review and respond to your comments. Responses to all comments will be included in a responsiveness summary. The summary will be made part of the public record and mailed directly to those who comment following the public comment period. Comments will also be posted on Ecology's Whatcom Waterway webpage at www.ecy.wa.gov/programs/tcp/sites/whatcom/ww.htm

Please print clearly

Name: Jerry E Bell
 Organization/Neighborhood: ILWU #7
 Mailing Address: 1643 MT Baker Hwy
 City: Bellingham State: WA Zip: 98226
 Email: [Signature]
 Phone Number: 360-671-9306

Comments (if you need more space, please use the backside.):

I approve of Ecology's proposed cleanup of the
Whatcom waterway for seven million. The more expensive
cleanup disposal is not needed. The dredging and
cleanup needs to start as soon as possible and
Ecology's proposed seven million plan will do that a
Jeb

From: john Blethen [<mailto:jhblethen@hotmail.com>]
Sent: Tuesday, April 26, 2011 3:27 PM
To: McInerney, Lucy (ECY)
Subject: ASB

The least expensive plan for dealing with the contamination in the waterway is the plan proposed by Anchor Environmental which was the preferred plan by Georgia Pacific. This plan involves sectioning a portion of the ASB. As such contamination is confined to an upland disposal site. This Anchor Plan appears to remain the most affordable. With limited MTCA monies available to the fund the many cleanup projects in Washington State I would think that this plan would be the preferred plan.

1

Subject: FW: Whatcom Waterway

-----Original Message-----

From: George Dyson [mailto:gdyson@gmail.com]

Sent: Tuesday, March 15, 2011 10:49 PM

To: McInerney, Lucy (ECY)

Subject: Whatcom Waterway

Dear Lucy McInerney, and colleagues:

While I applaud any movement forward in the effort to clean up Whatcom Waterway, I am afraid the currently proposed revised consent decree may be just another incremental step down a path that postpones achieving the stated goal.

Confined Aquatic Disposal was on the table for a long time, but taken off before the decisions as to what was cost effective to clean up, and what wasn't, were made. If CAD is now back on the table then these decisions should be revisited especially with regard to the inner waterway, and the head of the waterway, for which data are inadequate both as to existing sediment conditions and contaminant mobility over time.

1

George Dyson

From: George Dyson [mailto:gdyson@gmail.com]
Sent: Tuesday, April 26, 2011 6:24 AM
To: McInerney, Lucy (ECY)
Subject: Proposed Amendment to Whatcom Waterway Consent Decree

Lucy McInerney, site manager
Washington Department of Ecology

RE: Proposed Amendment to Whatcom Waterway Consent Decree

Dear Lucy McInerney, and colleagues:

I offer the following comments on the proposed amendment to the Whatcom Waterway consent decree:

- 1) This revision seems to constitute far more than an "amendment." The return to Confined Aquatic Disposal represents a fundamental shift in policy and as such should trigger a reconsideration of the assumptions underlying the entire cleanup plan. 2

- 2) The matter of costs, and who pays for what, and for how long into the future, seems to be oddly absent from the discussion. The whole point of the cleanup cost overrun insurance agreement between the Port and AIG was to guard against unforeseen cost escalation, such as that prompted by the change in dioxin/furan disposal rules. Disposal within the ASB appears to be shifting those costs and liabilities (now and for a very long time in the future) from AIG (as well as from G-P and Koch Industries) to the taxpayers. This may (or may not) be the best solution, but shouldn't we see a true cost analysis of this? 3

- 3) If the ASB is to be used for low-cost Confined Aquatic Disposal, I urge reconsideration of the decision to leave Area 3A at the head of Whatcom Waterway (between Roeder Avenue and the clarifier pond) designated as "naturally recovered" and excluded from the cleanup plan. Although it may currently meet surface sediment quality criteria, underlying the surface is a significant layer of accumulated contaminated sediment, much of it consisting of anoxic wood debris that is unstable over time. If these sediments can be inexpensively disposed of in the ASB, we should do so. If these sediments are too contaminated for disposal within the armored confines of the ASB, then why are we leaving them in an unstable location in a critical estuary in the most accessible part of the entire site? Methane is visibly bubbling up from these underlying sediments and contaminant mobility under these conditions is poorly understood. 4

with best wishes,

George Dyson

From: Ryan Ferris [mailto:rferrisx@gmail.com]
Sent: Monday, April 25, 2011 11:50 PM
To: McInerney, Lucy (ECY)
Subject: Public Comment on The Whatcom Waterway Cleanup...

Ms. McInerney:

Congratulations on completing a plan to clean up the Whatcom Waterway!

I would like particular attention in the environmental remediation paid to the potential of a 9.0M Earthquake and Tsunami from the Cascadia Subduction Zone. An (2004) analysis of the effect of a Tsunami on Bellingham Bay is available online. However, since the recent Sumatran, Japanese, and Chilean Tsunami/Earthquakes (9.0M,9.1M,8.8M respectively), additional data has been collected that suggests a potentially much more destructive outcome for Bellingham Bay. Some corresponding information can be found at the references below. The current literature and research suggests that a 9.0M on the Cascadia Subduction Zone is now imminent. Seismic scholars like Chris Goldfinger of OSU suggest that such a calamity has high probability of happening within our lifetime. Indeed the Oregon Department of Geology has stated:

19-20 giant (Mw 9+) earthquakes struck the whole Cascadia margin in the past 10,000 years. USGS estimates a ~10 to 14% chance in the next 50 years for these earthquakes (Peterson et al., 2002, Pure and Applied Geophysics, v. 159, p. 2147-2178).

- ♣ Smaller (~Mw 7.6 to 8.5) Cascadia earthquakes occur between the Mw 9+ earthquakes in southernmost part of the subduction zone. These events will probably be felt throughout the Oregon coast.
- ♣ Counting both the smaller and giant Cascadia earthquakes, 40-42 struck in southernmost Oregon (south of Bandon) in the last 10,000 years.
- ♣ **There is a strong possibility that the next Cascadia earthquake will happen during your or your children's lifetime. [emphasis added -RMF]**

In no case, does Whatcom County or Bellingham appear to be a "Tsunami Ready Community". It seems clear to me that the greatest threat to life posed by the Whatcom Waterway will not be mercury, dioxin, or other toxics. It will be the effect of a Tsunami on

this sea level property. In his March 16th, 2011 letter to the NTHMP, President Barack Obama has commented:

"As we offer our assistance to those impacted by this tragedy, we also renew our commitment to ensuring preparedness along our shores. Efficient warning systems and awareness in coastal communities are vital to protecting Americans in at-risk areas of the country. To meet these needs, the National Tsunami Hazard Mitigation Program (NTHMP), a partnership of State and local governments and Federal agencies, is working to reduce the impact of tsunamis through the hazard assessment, evacuation planning, and education outreach. While the danger posed by tsunamis cannot be eliminated, these efforts can help save lives by equipping citizens to effectively respond to emergency situations."

Although, ECY does not have any direct responsibility for emergency planning, ***years of cleanup, mitigation, and public tax monies will be thrown away*** by the destructive effective of just one large tsunami on Whatcom Waterfront. Recently, ECY's director has said:

"As individuals and as a society, I believe one of our most basic responsibilities is to pass on to those that come after us a world that is as good as, or better than, the one given to us. Decency requires that we be concerned not just for our own quality of life, but for the quality of life of those who will follow us."

There may be no Whatcom Waterfront to pass on to our children at all if the predicted 9.0M Cascadian Subduction Zone Earthquake and Tsunami occurs. I realize that this concern may fall outside of ECY's typical area of concern. However, as a citizen of Whatcom County, I feel that it is incumbent of me to point out that any work ECY does here can be **utterly destroyed** in a few short, brutal minutes by such an event.

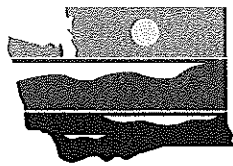
Therefore, I must ask you to implement Tsunami protection into any Whatcom Waterfront clean-up for both the sake of the environment and the lives of the citizens of Whatcom County,

Thanks for your time,

Ryan M. Ferris
1401 E. Victor
Bellingham, Wa
98225

- <http://www.bellinghamherald.com/2011/03/20/1923561/quakes-a-possibility-for-whatcom.html>
- <http://www.livescience.com/3775-tsunami-generating-earthquake-possibly-imminent.html>

- <http://www.crew.org/papers/CREWCascadiaFinal.pdf>
- http://en.wikipedia.org/wiki/Cascadia_subduction_zone#Prediction_of_the_next_major_earthquake
- http://earthquake.usgs.gov/earthquakes/shakemap/global/shake/Casc9.0_se/
- http://geology.about.com/od/quake_preparedness/a/aa_cascadiaEQ.htm
- <http://www.usfa.dhs.gov/pdf/efop/efo39319.pdf>
- <http://pubs.usgs.gov/pp/pp1707/pp1707.pdf>
- <http://www.crew.org/wordpress/wp-content/uploads/TsunamiSymposiumReport1.pdf>
- <http://www.crew.org/PDFs/Casc%20Deep%20EQ%20web.pdf>
- http://www.crew.org/wordpress/wp-content/uploads/CREW-CBA-Presentation_Jan19_20111.pdf
- <http://www.oregongeology.org/tsuclearinghouse/resources/ppts/Tsunami-Basics.pptx>
- <http://www.oregongeology.org/tsuclearinghouse/resources/ppts/Earthquake-Basics.pptx>
- <http://sites.google.com/site/wwuwcmp/hazard-mitigation-planning-process>
- http://geology.wvu.edu/rjmitch/whatcom_liq.pdf



Comment Form

Whatcom Waterway Consent Decree First Amendment

Comments must be received by 5 p.m. April 27, 2011

Thank you for participating in today's meeting. If you wish to submit a written comment, you may use this form. **Please place your comment form in the Comment Box before you leave.** You may also mail this form to: Department of Ecology, attention Lucy McInerney, 3190 160th Ave SE, Bellevue, WA 98008 or e-mail your comments to Lucy McInerney at lucy.mcinerney@ecy.wa.gov. Please indicate the Whatcom Waterway Site in your subject line.

Ecology will review and respond to your comments. Responses to all comments will be included in a responsiveness summary. The summary will be made part of the public record and mailed directly to those who comment following the public comment period. Comments will also be posted on Ecology's Whatcom Waterway webpage at www.ecy.wa.gov/programs/tcp/sites/whatcom/ww.htm

Please print clearly

Name: Kevin Foster

Organization/Neighborhood: ILWU # 7 Bham

Mailing Address: 5938 n star Rd.

City: Ferndale State: wa Zip: 98248

Email: _____

Phone Number: 360 384 4871

Comments (if you need more space, please use the backside.):

I approve the revised plan that ecology
has proposed, Bellingham need to move
forward with the dredging before it
becomes so expensive we can't afford
to dredge.

1

RECEIVED

APR 25 2011

DEPT OF ECOLOGY
TCP-NWRO



Comment Form

Whatcom Waterway Consent Decree
First Amendment

Comments must be received by 5 p.m. April 11, 2011

Thank you for participating in today's meeting. If you wish to submit a written comment, you may use this form. **Please place your comment form in the Comment Box before you leave.** You may also mail this form to: Department of Ecology, attention Lucy McInerney, 3190 160th Ave SE, Bellevue, WA 98008 or e-mail your comments to Lucy McInerney at lucy.mcinerney@ecy.wa.gov. Please indicate the Whatcom Waterway Site in your subject line.

Ecology will review and respond to your comments. Responses to all comments will be included in a responsiveness summary. The summary will be made part of the public record and mailed directly to those who comment following the public comment period. Comments will also be posted on Ecology's Whatcom Waterway webpage at www.ecy.wa.gov/programs/tcp/sites/whatcom/ww.htm

Please print clearly

Name: DRETT E. FROST
 Organization/Neighborhood: I.L.W.U. #7
 Mailing Address: 1307 ROMA Rd B'H.
 City: BEZZINGHAM State: WA Zip: 98226
 Email: N/A
 Phone Number: 360 (325-2445)

Comments (if you need more space, please use the backside.):

I would be in complete support of
dredging of the whatcom waterway.
It is beyond a timely manner that
this cleanup takes place. The longer
the wait the more expensive it seems

to get. Whatcom County needs to take advantage of this opportunity for good jobs and a significant amount of tax revenue at stake that's being lost every day. It is critical at this time in our downturned economy that this take place sooner than later.

Subject: FW: Whatcom Waterway Cleanup Action Plan

From: JIM HANSEN [mailto:jh_mk1234@msn.com]

Sent: Monday, March 14, 2011 4:08 PM

To: McInerney, Lucy (ECY); ddbeatty@q.com; Leif Emberston; Seymour, Stephen A (DFW)

Subject: FW: Whatcom Waterway Cleanup Action Plan

Dear Lucy

My position does not correspond to any of the proposed options for the cleanup. The most toxic sediments should be taken to an upland landfill. Its OK to cap the less toxic sediments.

The GP treatment lagoon should not be a repository. It should be removed and its toxic sediments taken to the landfill as well. The natural shoreline should be restored.

Likewise the entire area of the GP site supported by pilings should be removed and the shoreline restored to a natural slope.

The cleanup criteria should not be cost effectiveness. From my perspective COB and POB made a bad deal with GP and should have to live with it. Your duty is to future generations and environmental recovery.

Jim Hansen

Ecology is having a public comment period on the proposed changes from March 11 - April 11, 2011, and a public meeting March 15.

Submit comments to:

Lucy McInerney, site manager
Washington Department of Ecology
3190 160th Ave. SE
Bellevue, WA 98008-5452
lucy.mcinerney@ecy.wa.gov

Public meeting: 6 – 8 p.m., March 15 at Bellingham Technical College, 3028 Lindbergh Ave., Building G., Room 102A.

1

Subject: FW: Comment Regarding Amending Whatcom Waterway Consent Decree

From: Wendy Harris [mailto:w.harris2007@comcast.net]

Sent: Wednesday, March 16, 2011 10:11 PM

To: Nord, Tim (ECY); McInerney, Lucy (ECY); sale461@ecy.wa.gov; Bradley, Dave (ECY); Pendowski, Jim (ECY)

Cc: waterfront@cob.org

Subject: Comment Regarding Amending Whatcom Waterway Consent Decree

Any attempt to amend the Whatcom Waterway Consent Decree is invalid until the Department of Ecology is in current compliance with the Public Participation Plan for this project, as set out in http://www.ecy.wa.gov/programs/tcp/sites/whatcom/Sept_20_07/10%20Exhibit%20F%20-%20Final%20Public%20Participation%20Plan%20Sept%202007.pdf, reflected as Exhibit F at <http://www.ecy.wa.gov/programs/tcp/sites/whatcom/ww.htm>, as well as Washington State regulatory obligations set out in WAC 173-340-600(7) and (9)(d).

1

The Washington Administrative Code, generally, and the Public Participation Plan for the Whatcom Waterway Consent Decree, specifically, require DOE to maintain a "Site Register" to inform the public of all relevant information, reports, engineering design plans, the beginning of negotiations or discussions under WAC 173-340-520, missed deadlines under WAC 173-340-140, schedules, a list of all available department publications, and any other notice that the Department of Ecology considers appropriate for inclusion.

Neither state regulations nor the local Public Participation Plan contain a provision that excuses DOE's obligation to publish, make available electronically, and maintain a publication called the "Site Register." The Site Register is clearly intended to perform the important function of ensuring open and transparent government on matters pertaining to public health and safety through implementation of the Model Toxic Control Act.

However, when I attempted to view the Site Register yesterday at http://www.ecy.wa.gov/programs/tcp/pub_inv/pub_inv2.html, I was advised of the following:

Site Register | Public Notices & Participation

Ecology suspends Site Register Updated!

Current budget and hiring constraints are forcing the Department of Ecology to temporarily suspend publication of the Site Register. We apologize for any inconvenience this may cause.

Our longtime Site Register editor is retiring and we are temporarily unable to refill the position. We are reviewing staff workloads, assessing priorities, and shifting duties to try to accommodate this work. We ask for your patience while we go through that process.

The website link for the Whatcom Waterway Consent Decree is not a substitute for the Site Register, which is required by regulation to be called the "Site Register" and which performs a broader scope of functions. Therefore, it would not be appropriate for the Superior Court to approve a requested amendment to a Consent Decree while the DOE is noncompliant with the Consent Decree terms, or with state regulation.

Moreover, it reflects poor policy for the DOE to pursue amendments requested by the Port while ignoring the Public Participation Policy provisions, particularly when public comments made at last night's public meeting, were, with one exception, negative. Ms. McInerney stated that DOE would review and consider revising the proposed amendment if public comment reflected procedural error. I think that failure to comply with the local public participation plan qualifies as a procedural error.

I request that DOE rescind its proposed amendment, Publication 11-09-121 (March 2011) reflected at <http://www.ecy.wa.gov/pubs/1109121.pdf> (which was not directly cited on the DOE website for the Whatcom Waterway Consent Decree) and re-issue a proposed amendment, if any, after it cures its legal and procedural defects with regard to this Consent Decree. Moving forward at this time could result in a further waste of DOE resources when such resources could be better used in restoring the mandated Site Register.

Sincerely,

Wendy Harris

Subject: FW: Scoping deficiency

From: Tip Johnson [mailto:tip@dangelointernational.com]

Sent: Tuesday, March 15, 2011 7:50 PM

To: McInerney; Lucy (ECY)

Subject: Scoping deficiency

Dear Ms. McInerney,

I am very concerned that important public resources are being overlooked in plans for Bellingham Bay and adjacent uplands.

As part of the G-P acquisition, the public now owns not only one of the largest water treatment facility in Washington State, but also a large industrial water supply feeding the former industrial site.

As your own department noted in comments on the DEIS for the Port's upland master plan, the Port did not follow the letter of the law in their framing of the project's scope. By putting their proposed marina in the No-Action Alternative, they considered themselves able to refuse answering comments related to the water treatment potential of the ASB lagoon and property, as well as the lost job opportunities of breaching the lagoon and orphaning the industrial water supply – both of which could have attractive recruitment value for future economic growth. Your department's comments proved prophetic. After scoping was complete, the Port and City agreed to a framework of assumptions that put the marina conversion of the ASB into the Preferred Alternative for final consideration. At no time was scoping reconsidered to allow comments concerning the other public values of these resources.

1

The same is true of current efforts to find a place for contaminated sediments. At no time has there been an opportunity to evaluate the potential of these resources to meet public needs and reduce public costs.

The ASB is located at the bottom of Bellingham's major development drainages. Combined sewer overflows are currently discharged at the very foot of the lagoon. Most sanitary flows are now pumped via forced main to the Post Point Sewage Treatment Plant in Fairhaven. A very expensive cheek-to-jowl expansion of that facility is currently under consideration.

2

The lagoon has several potential uses. Combined sewer overflows could be pumped into the lagoon for mid-bay discharge through the existing outflow to the state approved mixing zone. This would help protect the recovering nearshore habitat. A treatment regime could be reestablished in the lagoon for sanitary treatment, obviating the need for expansion at Post Point. The toxic woodwaste slurry now robbing oxygen and preventing the recovery of Bellingham Bay's inner harbor could be suction dredged into the lagoon, oxygenated for decomposition and discharged mid-bay, again assisting the nearshore habitat's recovery. The large facility could be subdivided to accommodate sanitary, industrial and stormwater treatment regimes. The lack of such available facility has adversely impacted vegetable and fish processing in Whatcom County. The lagoon could be filled with contaminated sediments and still support banks of clarifiers fulfilling these various purposes.

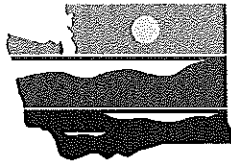
As such, it could help clean up some unfortunate industrial history, protect the nearshore habitat, support family wage job creation and save significant public costs of replacing this capacity to fulfill

these needed functions.

Is there any chance that your department might seize its charge, follow the law and create an opportunity for the public to consider the alternative potential values of these publicly owned resources before they are wrecked or orphaned and important environmental and economic opportunities are lost? Please advise.

Thank You,

Tip Johnson
2719 Donovan Avenue
Bellingham, WA 98225
Tel 360-255-1200
Fax 206-350-3664
tip@skookum.us



Comment Form

Whatcom Waterway Consent Decree First Amendment

Comments must be received by 5 p.m. April 27, 2011

Thank you for participating in today's meeting. If you wish to submit a written comment, you may use this form. **Please place your comment form in the Comment Box before you leave.** You may also mail this form to: Department of Ecology, attention Lucy McInerney, 3190 160th Ave SE, Bellevue, WA 98008 or e-mail your comments to Lucy McInerney at lucy.mcinerney@ecy.wa.gov. Please indicate the Whatcom Waterway Site in your subject line.

Ecology will review and respond to your comments. Responses to all comments will be included in a responsiveness summary. The summary will be made part of the public record and mailed directly to those who comment following the public comment period. Comments will also be posted on Ecology's Whatcom Waterway webpage at www.ecy.wa.gov/programs/tcp/sites/whatcom/ww.htm


Please print clearly

Name: JAMES KING

Organization/Neighborhood: Bellingham Longshore Inc

Mailing Address: 6431 Woodlyn Rd Ferndale

City: Ferndale State: WA Zip: 98268

Email: 

Phone Number: 360-384-4498

Comments (if you need more space, please use the backside.):

I approve of Ecology's proposed cleanup of the Whatcom Waterway for seven million. The more expensive cleanup disposal is not needed. The dredging & cleanup needs to start as soon as possible & Ecology's proposed seven million plan will accomplish that.

From: **john munson** <jmunson8@gmail.com>
Date: Wed, Apr 27, 2011 at 8:18 AM
Subject: Dredging Whatcom Waterway
To: lucymcinerney@ecy.wa.gov
Cc: john munson <jmunson8@gmail.com>, ilwu07@comcast.net

Lucy McInerney; Project Manager
Whatcom Waterway,
Bellingham Bay Demonstration
Pilot Project

April 27, 2011

Dear Lucy,

I am writing to you regarding the proposed dredging and cleanup project in front of the shipping terminal in Whatcom Waterway, Bellingham Washington. I want to speak specifically to the proposed amendment (PDF 1.32 MB) which would amend the agreement of the 2007 legal settlement. This amendment would allow dredge spoils from Whatcom Waterway to be placed inside the former Georgia Pacific Aerated Settling Basin. The basin will be dredged to a depth deep enough to reach clean material and contain the dredge spoils dredged from the waterway. Under the amendment the spoils would be capped with clean material and the contaminants from the project would be isolated from the water column.

This is a great idea and will once again allow the Bellingham Shipping Terminal to have sufficient depth in the Waterway so vessels involved in commercial trade can safely call at the terminal. Between the 1960's and the early 2000's millions of tons of cargo moved into and out of the terminal and it served as a real economic driver for the county. The Waterway has not been dredged since the 1960's so dredging to commercial depth and cleanup of Georgia Pacific residue is long overdue. We need to proceed as quickly as possible because standards for allowable contaminant levels in the environment seem to be a living thing that change constantly. For example, in the life of this project standards for allowable contaminants in the environment has gone from parts per million , to parts billion and I think at the present time parts per trillion. Let's get this Waterway cleaned up while we are still allowed to isolate any contaminants from the water column.

In closing I would like to thank you for all the work you've done in sheperding this project through the process. I know that it has been a hard and at times frustrating tasks but you have taught me a lot about perseverance , once again thank you for your work. I believe we should approve the amendment and get that muck out of Bellingham Bay.

Respectfully yours, John Munson

2195 Lummi Shore Rd
Bellingham, Washington
98226

P.S. Please let me know you've received this.



April 27, 2011

Lucy McInerney, P.E
 Site Manager, Whatcom Waterway
 Washington Department of Ecology
 3190 160th Ave., SE
 Bellevue, WA 98008-5452
 Via email: lucy.mcinerney@ecy.wa.gov

RE: First Amendment to Consent Decree Re: Whatcom Waterway Site, Bellingham, Washington

Dear Ms. McInerney,

Thank you for the opportunity to provide comment on the *First Amendment to Consent Decree Re: Whatcom Waterway Site, Bellingham, Washington (2007)*.

People For Puget Sound is a nonprofit, citizens' organization whose mission is to protect and restore Puget Sound and the Northwest Straits.

The quality of Puget Sound is of inestimable value to all of us. We support the work of Ecology and the Puget Sound Partnership to recover the health of Puget Sound. A thorough and permanent cleanup of Whatcom Waterway is a critical piece of the overall recovery of the Sound.

Ecology has proposed a change in the cleanup plan due to new information (collected since 2007) about the broad distribution of dioxin and furans in Units 1A and 1B.

Our comments follow:

- **Option selection.** People for Puget Sound is opposed to the Dredging and Unit 8 Disposal option (Section 5.6.1) in the proposed First Amendment to Exhibit B, Cleanup Action Plan. The approval of this option would be based on insufficient information (e.g., the full environmental impact), would rely unreasonably on the ability/political will power of future governmental entities to maintain Unit 8 in a safe condition over time, and would ignore the threat of future natural stresses/real world complexities to Puget Sound and its surrounding area.
- **Concern about the Decision Process.** People For Puget Sound believes that this amendment is not the appropriate mechanism to make this decision. Full information about the alternatives is not laid out. A full consideration of the alternatives in light of new information is not available as is required in the MTCA process. We are also concerned about the levels of contaminants which are proposed to be placed in the Confined Aquatic Disposal (CAD) site and the

1

2

3

lack of Biologic Screening Level (BSL) for dioxin and the inadequate BSL for mercury. Finally, sediment contamination has not been adequately characterized.

- **Lack of information.** We feel there is insufficient information to move forward. Many of the details fundamental to the amendment decision await the completion of the engineering design (Section 5.6.1). The application of the Dredged Material Management Program (DMMP) guidelines (December 6, 2010) is unclear. The DMMP paragraph has been deleted (Section 3.4.1). What are the “institutional controls” (Section 1.2) and how effective would they be over time (see below)? What justifies the estimate that the need to monitor will end in 30 years (Section 7.2)? Has further dioxin/furan testing been accomplished as recommended in the August 2010 Pre-Remedial Design Investigation (PRDI) Data Report, Section 7.3.2?¹
- **Concern about long-term sustainability/certainty of the cleanup option.** This decision encompasses compliance monitoring, maintenance and repairs/upgrades to the Unit 8 marina underlying structure. Today we are seeing numerous examples where budget pressures and weak political will are forcing governments to cut back, and sometimes renege, on prior commitments. It is common knowledge our national highway/bridge system is significantly behind in its maintenance program. How will future pressures, many of which are now unforeseeable in our environment of growing population/dwindling resources, affect government abilities to carry through with their responsibilities to fund and maintain the viability of your Dredging and Unit 8 Disposal option? How long would the Unit 8 cap last (Section 5.6.1)? What would be involved in its eventual replacement/refurbishment?
- **Natural Disasters and Manmade disasters.** We are concerned about using a CAD to hold contaminated material. The effects of the March 11, 2011, magnitude 9.0 earthquake/tsunami that devastated Japan’s northeast coast emphasize the threat of disasters and illustrate how two or more forces acting near simultaneously can negate design safeguards.² Puget Sound/Bellingham Bay are on the Pacific Ocean’s “Ring of Fire,”³ a relatively high-level earthquake/tsunami prone area. The fault located north of Bellingham recently detected by the Western Washington University Geology Department⁴ reinforces this concern. The March 2011 “Economist” (p 40) states “the Pacific north-west is primed” for “an earthquake of magnitude 9.0,” one in three chances of it occurring “within the next 50 years.” The faulty design/bent pipe of the Deepwater Horizon wellhead blowout preventer in the Gulf of Mexico leading to the large oil spill recently illustrated the human factor.
- **Marina as CAD.** Further, we are concerned about placing a marina over a CAD. This is contrary to the need to ensure that there is NO disturbance of the material. At the very least, there will be unusual propeller wash surges from time to time, and in addition, there are numerous opportunities for human activities to disturb the material such as dragging anchors, sinking of boats (fires at the marina), and other. It is difficult to imagine that institutional controls would work in this scenario.

¹ Anchor QEA, Pre-Remedial Design Investigation Data Report, Whatcom Waterway Site Cleanup, August 2010.

² Reportedly, these floods would have been blocked by the berm built to forestall them. However, the earthquake caused the sinking of the land (~1 meter) on which the berm was located, thus allowing the floods to flow over it.

³ Susan Casey’s “The Wave” (2010) states the Ring of Fire is the location of 80 percent of all tsunamis (p 164).

- **Our recommended option.** People For Puget Sound supports the Dredging and Upland Disposal option (Section 5.6.1). We feel the material must be removed from the Sound, not leaving a contaminated CAD in place for future generations to have to address. The Section 5.6.1 rationale that “Unit 8 disposal is permanent to the maximum extent practicable and is the preferred cleanup option” as “core costs (Appendix B-1) associated with upland disposal are disproportionate to increased environmental benefits” does not take into consideration costs to future generations to maintain, repair, and, if necessary, clean out this toxic waste dump. In our judgment the enhanced environmental benefits (and probably the long term costs) more than justify the immediate higher costs of the Dredging and Upland Disposal option.
- **Methylmercury concern remains.** People For Puget Sound remains concerned about the presence of mercury/methylmercury in the sediments (August 2010 PRDI Data Report referenced in the First Amendment to the Cleanup Action Plan). We have repeatedly requested that a specific study/evaluation of the food chain effects in Bellingham Bay/Puget Sound from these substances be conducted. Our concerns include the PRDI Data Report providing a substantial amount of data but little commentary on their implications, high sediment mercury and methylmercury concentrations in some places, no plan to estimate bioaccumulation factors⁵ (or what data is needed to estimate them), the lack of calculated translators that relate water mercury concentrations to the data available (i.e., sediment mercury content), and how the new depth profile analytic data aligns with the assumption new sediment will effectively cover the historically contaminated material.

People For Puget Sound commends the quality of the Port’s recent monitoring program⁶ that identified the dioxin/furan hazardous substances in the Unit 1 area subsurface sediments.

Thank you for your consideration. You can reach me at (206) 382-7007 X172 if you have any questions or concerns. You can also reach Tom Winter who works with us on this issue at t2winterjr@yahoo.com.

Sincerely,



Heather Trim
Urban Bays and Toxics Program Manager

⁵ Ratio of receptor mercury content to mercury concentration in contaminated water body.

⁶ Op cit, Footnote 2.

From: scott piper [<mailto:jscottpiper@hotmail.com>]
Sent: Sunday, April 24, 2011 9:46 PM
To: McInerney, Lucy (ECY)
Subject: Whatcom Waterway amendment comment

April 14, 2011

Scott Piper
203 W. Holly Street Suite 308
Bellingham, WA 98225
jscottpiper@hotmail.com

Lucy McInerney, site manager
Washington Department of Ecology
3190 160th Ave. SE
Bellevue, WA 98008-5452
lucy.mcinerney@ecy.wa.gov

Regarding your request for comments on the consent decree for Whatcom Waterway.

Dear Lucy,

The request for comments on the amendment to the consent decree does not identify public access to the shoreline as a type of comment wanted.

Obviously, under the Shorelines Management Act a public access is a priority on the salt water frontage. I believe a green space about 30 yards in width would be adequate. A bike path loop should be planned. A bridge across the marina access breach should be planned. I like the Blethen Group plan which shows a large public rest and recreation area that occupies at least half of the old GP lagoon located out on the point, to serve a greater number of Bellingham people. Despite the fact the Port can get rent money from people who would own pleasure craft at moorage, I believe the other 99.9% of people deserve recreation area too, not just pleasure craft owners. 1

The 'cross section' in your request for comments notice indicates no increase in the size of the dike which would have been shown if your plan were in any way respondent to the Blethen group plan, or any detail of construction at the top of the dike let alone landscaping features of any kind.

When a port would construct a new marina on prime salt water frontage it is subject to the Shorelines Management Act.

The dioxin and furan and any other carcinogenic materials present including mercury mentioned in the amendment request for comments do not belong in the marina waters or anywhere near public space. 2

Scott Piper
Architect

From: scott piper [<mailto:jscottpiper@hotmail.com>]
Sent: Wednesday, May 04, 2011 10:11 AM
To: McInerney, Lucy (ECY)
Subject: RESEND OF APRIL 17 COMMENTS

I'm trying this again.

Dear Lucy,

I've pasted in my April 17 comments below. Thank you for this opportunity to comment.

Scott Piper
Architect

April 17, 2011
Scott Piper
203 W. Holly Street Suite 308
Bellingham, WA 98225
jscottpiper@hotmail.com

Lucy McInerney, site manager
Washington Department of Ecology
3190 160th Ave. SE
Bellevue, WA 98008-5452
lucy.mcinerney@ecy.wa.gov

Re: Comments for Whatcom Waterway cleanup 2007 consent decree proposed amendment draft

Gentlemen:

Please consider my comments about the proposed amendments to the 2007 consent decree about clean up for the outer Whatcom Waterway:

1. Since the plan picks up the dioxin and furans why not just get it out of Bellingham Bay for good? I do not agree it makes any sense to put it back into the water after going to all the trouble to lift it out.

2. Is the real reason the proposal will dump the dredged dioxin and furans poison into the existing GP lagoon that advocates of this idea think it's cheaper? I do not agree that it is cheaper if that is the assumption. If cost feasibility is the issue why are cost figures not presented for public comment? Even if I could be convinced it is cheaper to put the poisons back into the water I do not agree that the poisons should be put back into the water.

3. The report says, 'the dredged dioxin and furans materials are not suitable as structural fill 'for buildings or roads'. The report concludes this is the reason, then, to dump the dredged dioxin and furans materials into the existing GP lagoon. I don't get it. Can you explain why the one thing follows the other please? Another better choice would be to put the materials on land in a non-structural situation.

4. The sludge scheduled to be removed from the existing GP lagoon, like the dredged dioxin and furans, is not suitable for use as structural fill for such things as building projects and roads and will be located upland. Why not locate the dioxin and furans at the same location as the sludge at the upland location? I believe there is room somewhere for the poisons to be located upland, whether with the sludge or separately, and like the sludge not be used as a structural material.

3

4

5

6

5. I disagree with the plan concept that an underlayment of dioxin and furans is desirable for a marina, as is proposed with this amendment. Ask anybody, "What would you prefer in the water under our boats, dioxin and furans poisons or clean sand?" Who would choose dioxin and furans poisons? I believe nobody would prefer poison. I believe everybody would prefer clean sand.

7

6. I believe the work proposed by this amendment will likely make the existing GP lagoon earth fill dike less laterally stable due to the removal hundreds of thousands of cubic yards of settled clean sand seabed, and resultant disruption of the base bed. The existing sand settled by time and bonded to the base bed and its mass acts as a buttress against the sides of the earth fill dike providing a lateral reaction to movement and/or slumping of the dike during an earthquake. Will the dredged spoils of dioxins and furans form a replacement mass that is an equivalent buttress? No. The proposal itself says these materials are not structurally suitable for buildings or roads.

8

7. The likelihood of a major earthquake and resulting tsunami activity must be carefully considered.

9

8. The Environmental Impact Statement for this project should be revised for the proposed changes in the amendment, and earthquake and tsunami activity possibility be addressed.

10

9. I agree with removal of the contaminated sludge from the existing GP lagoon and disposing of it on land at a sensible location which this amendment explains is part of the work of the original consent decree. In view of the recent events in Japan however I believe that the mass of the sludge proposed to be removed be considered and I think it would be prudent and advisable to at least add back additional clean sand or other ballast of equal mass so as not to lesson the lateral structural stability of the existing earth fill GP lagoon dike.

11

10. I also disagree with removal of clean sand from the bottom of the existing GP lagoon because the clean sand is a good filter and can be a better base for new undersea habitat for undersea life. Certainly clean sand is a better habitat for sea life than hundreds of thousands of yards of dioxin and furans poisons.

12

11. I believe the amendment is correct to remove the dioxins and furans from the outer Whatcom Waterway and to not dump them into open water as originally proposed and part of the original consent decree.

13

12. I agree with not using the removed dioxin and furans on land for structural fill to support roads or buildings. Who would want poison under their building or road simply because it is poison? The report implies the material has been considered and determined not strong enough for construction. I agree this is another good reason not to use it for buildings or roads, of course.

14

13. The dioxin and furans should best be properly disposed of on land. The first step is to purchase a site. Work should be delayed until an approved site is secured. The contaminated sludge, dioxin, and furans where re-located must be contained by a permanent basin with no seepage to adjacent soils. Ground water must be protected. The deposit must be capped to prevent leaching. The basin and cap would be a containment system and it should be designed to be maintainable or maintenance free for, say, hundreds of years.

15

14. I'm concerned about the real risk of a devastating Earthquake and Tsunami. The proposed amendment assumes the existing GP lagoon dike is a stable structure and a suitable 'vessel' that will control the sides of the proposed concentrated volume of dioxin and furans dredging.

16

Would the existing lagoon dike, modified as proposed, withstand an earthquake with an epicenter within a radius of say a mile or so, at a depth of say one kilometer, and with a magnitude of say 9.5 on the Richter scale?

The existing University of Washington model predicting a plausible seismic event where all the sludge in Bellingham Bay slides off of the bay shelf and down into the deep water adjacent to Lummi Island forecasts a massive tidal wave.

So, if proposed project goes forward as presented and there is a major seismic event and resulting tsunami with a retreat of waters as at Sendai presumably emptying the marina followed by a wave of say 45 meters in height, where then will the lagoon and its contents including fills end up? Will such dioxin and furans poison fills then be part of a massive overlay of mud and debris laying throughout Bellingham?

Scott Piper
Architect



Comment Form

**Whatcom Waterway Consent Decree
First Amendment**

Comments must be received by 5 p.m. April 11, 2011

Thank you for participating in today's meeting. If you wish to submit a written comment, you may use this form. **Please place your comment form in the Comment Box before you leave.** You may also mail this form to: Department of Ecology, attention Lucy McInerney, 3190 160th Ave SE, Bellevue, WA 98008 or e-mail your comments to Lucy McInerney at lucy.mcinerney@ecy.wa.gov. Please indicate the Whatcom Waterway Site in your subject line.

Ecology will review and respond to your comments. Responses to all comments will be included in a responsiveness summary. The summary will be made part of the public record and mailed directly to those who comment following the public comment period. Comments will also be posted on Ecology's Whatcom Waterway webpage at www.ecy.wa.gov/programs/tcp/sites/whatcom/ww.htm

Please print clearly

Name: Randy Postlewait
 Organization/Neighborhood: Bellingham Inc
 Mailing Address: 807 North State St.
 City: Bellingham State: WA Zip: 98225
 Email: _____
 Phone Number: 360-592-5519

Comments (if you need more space, please use the backside.):

I approve of Ecologys clean up of the
Whatcom Waterway for seven million. The
more expensive cleanup disposal is not
needed. The Dredging and clean up is needed
as soon as possible.



2309 Meridian Street • Bellingham, WA 98225 • (360) 733-8307 • fax (360) 715-8434 • resource@re-sources.org

Lucy McInerney, site manager
 Washington Department of Ecology
 3190 160th Ave. SE
 Bellevue, WA 98008-5452
 [via e-mail: lucy.mcinerney@ecy.wa.gov]

April 26, 2011

Subject: Comments on Consent Decree Amendment for the Whatcom Waterway

Dear Lucy:

The North Sound Baykeeper, a project of RE Sources, has a mission to safeguard marine and freshwater water quality and habitat in Whatcom and Skagit Counties. RE Sources is a member-based organization, with approximately 700 members, the majority of whom live in Whatcom County. It is on their behalf, that we share our concerns about the proposed amendment to the consent decree.

In regard to the proposed change to the Whatcom Waterway Consent Decree (CD) we have four main areas of concern. These are the following 1) appropriateness of a CD to alter the Cleanup Action Plan, 2) appropriateness of the placement of a Confined Aquatic Disposal (CAD) site, 3) levels of contaminants in the proposed CAD, and 4) ability to impose institutional controls.

The Cleanup Action Plan is based on the data and comparison of information given in the Remedial Investigation/ Feasibility Study (RI/FS). The RI/FS compared 8 alternatives, one of which included a CAD and one of which included an ASB fill. According to the FS, neither of those alternatives compared favorably to the selected Alternative. While we recognize that these alternatives were paired with industrial use of the Waterway, the fact that these were not favorably reviewed points to the fact that this new Alternative needs to be further elucidated and vetted by the public. The same level of detail used to describe the previous alternatives should be used to describe this new Alternative in an FS Amendment. Only after vetting by the public in a more thorough review as that found in an FS and subsequent comment, should an amendment to the CD be proposed.

1

CAD sites are inherently less protective than upland disposal. Upland disposal removes contamination and thereby removes the risk of its subsequent disturbance and re-entry into the water column and food chain. While some contend that the marina site will be more protected than other CAD locations, a marina site also offers unique hazards.

2

CADs leave contaminated sediments in water where contamination can be disturbed by erosive action of waves, propeller wash, and burrowing animals. After the lagoon is breached, the CAD site will be exposed to some wave action, depending on wind and wave direction and intensity, including reflected waves into the marina entrance. As boats moor into slips, propeller wash is a real threat to cap integrity.

3

We have often witnessed the hard thrust of propellers as sailors maneuver their boats and ships into slips. As well, burrowing animals can be expected in the marina. These will exploit any holes made by pilings driven in to the cap to support marina infrastructure, as well as burrow into the cap. Their action has the potential to bring contamination to the surface.

The average amounts of dioxin and mercury to be placed in the CAD are cause for concern. We believe that an accurately derived Biologic Screening Level or BSL for both dioxin and mercury should represent the upper limit of what should be allowed in water. A BSL was not derived for dioxin and we continue to believe that the BSL derived for mercury was based on inadequate consumption rates (Excerpt North Sound Baykeeper Comment Letter; December 2006; RE Sources North Sound Baykeeper, Fish Consumption Rates for High Exposure Population Groups; July 2009; Washington Department of Ecology). We ask that a BSL be derived for dioxin, the BSL be re-evaluated for mercury, and that any contamination placed or left in-water be below the BSL.

In regard to Unit 5B, we concur that it is necessary to remove the contamination from the corner of the ASB to protect it from wave action. In that, we agree that placement into the lagoon is a superior location. We do not, however, believe that it is the best location. Dioxin values have not been characterized and these may be very high. Mercury values are only characterized by two samples and one of these presents unacceptable levels of 6.28 mg/kg (5x the currently established Biologic Screening Level).

Whenever contamination is left in water as part of a cleanup action, institutional controls are used to ensure that cap integrity is not harmed and contamination remains in place. While the CAD will be under Port control, it will not be possible to monitor all boaters all of the time in a high-usage, high-traffic arena such as a marina. As well, the placement of pilings to support the marina infrastructure and piers will pierce the cap structure. Disturbance to the integrity of the cap runs counter to the establishment of the cap and the purpose of institutional controls. Given this, we ask how will institutional controls and piling placement work together to prevent contamination escaping from the cap.

In closing, we ask the following in order to consider the newly proposed alternative: 1) Issuance of a Supplemental FS, 2) Derivation of a BSL for dioxin, 3) Re-evaluation of the BSL for mercury, 4) Adjustment of the proposal to place only mercury- and dioxin-contaminated sediments when these are below the newly calculated BSLs, 5) Better characterization of Unit 5B, and 6) Additional detail on how marina infrastructure and pier placement will not affect contamination.

Sincerely,

Wendy Steffensen, Lead Scientist
Matt Krogh, North Sound Baykeeper

Enclosures:

Excerpt North Sound Baykeeper Comment Letter; December 2006; RE Sources North Sound Baykeeper, Fish Consumption Rates for High Exposure Population Groups; July 2009; Washington Department of Ecology

4
5
6
7
8

**Excerpt from North Sound Baykeeper Comments_12/18/2006
Whatcom Waterway Remedial Investigation/ Feasibility Study**

The Bioaccumulation Screening Level developed for Bellingham Bay is not protective because it does not use subsistence fisher consumption levels and it is based on a poor statistical relationship.

- A Mercury is a persistent bioaccumulative toxin. It does not degrade over time and it can be taken up by marine animals and be passed up the food chain. Low levels of mercury can induce neurological abnormalities in fish, birds, orcas, and humans. Mercury toxicity is a concern in the U.S. One recent study found that “approximately 8% of women had concentrations higher than the US EPA’s recommended reference dose (5.8 ug/L) below which exposures are considered to be without adverse effects” (Shober et al, JAMA, April 2, 2003) A second study estimated that between 316,588 and 637,233 children have a loss of intelligence that causes “diminished economic productivity that persists over the entire lifetime of these children,” and that, “This lost productivity is the major cost of methyl mercury toxicity and it amounts to \$8.7 billion annually.” (Trasande, et al, Env. Health Perspec., May 2005)
- B Published mercury levels in fish and Dungeness crabs in Bellingham Bay and the Whatcom Waterway are higher than background and can pose a risk to humans who eat them. Published data show that the mercury concentration in crab tissue ranges from 0.100 to 0.211 mg/kg (ppm) in the Whatcom Waterway -1991 and 1997 collections, as shown in RI/FS. According to EPA, only 8 meals per month (8 ounces per meal or 227 grams/ meal) should be eaten if the mercury concentration is between 0.078 and 0.12 ppm wet weight, and only 4 meals per month should be eaten if the mercury concentration is between 0.12 and 0.23 ppm. (EPA 823-B-00-008; Guidance for Assessing chemical; contaminant data for use in fish advisories, Volume 2; Risk assessment and fish consumption limits). Subsistence fishers are estimated to eat 173 g / day /70 kg. If subsistence fishers ate crab containing between 0.078 and 0.12 ppm at this rate, they would be eating 2.7x more mercury than is considered safe; for crab containing between 0.12 and 0.23 ppm, they would be eating 5.4x more mercury than is considered safe. Recent sampling of crabs in the Whatcom Waterway show slightly lower levels of mercury than the previously published studies, although the numbers still appear to be elevated. Verification of any decrease in mercury levels in crab is necessary with a much larger number of samples in order to achieve statistical significance. (See attachment 1 for crab sample results)
- C The calculation used to obtain the BSL was a multi-step process which, when viewed step by step makes some sense, but when looked at as a whole, is inadequate. The need for a BSL is evident due to the persistent and bioaccumulative nature of mercury. What is not evident, however, is what value the BSL should be in order to protect humans and wildlife. The BSL has numerous shortcomings, elucidated below, that undermine its use as a protective standard. Because of the shortcomings in the derivation of the

BSL, its value of 1.2 mg/kg sediment should be replaced with 0.59 mg/kg sediment, a value equivalent to the MCL, a number for which there is some scientific justification.

- D The concept underlying the derivation of the BSL, that mercury concentrations in tissue are proportional to the amount of mercury in sediment, has proved to be a vast oversimplification. Researchers have found that accumulation of methylmercury into tissues cannot be accurately predicted based on the level of mercury in sediments. (Lawrence, A.L., and R.P. Mason. Factors controlling the bioaccumulation of mercury and methylmercury by the estuarine amphipod Leptocheirus plumulosus, *Environmental Pollution*: 11: 217-231, 2001). The fact that this correlation is an oversimplification is demonstrated by the calculated r^2 (regression coefficient) of 0.04 for bottomfish, 0.73 or 0.45, for Dungeness crab and 0.17 for clams and mussels. (Note that the latter regression coefficient for crab is calculated based on the full complement of Dungeness crab samples as calculated by the Public Participation Panel)
- E Regressions for each category- bottomfish, clams/mussels, and crab, were calculated, each with a low r^2 value. In fact the regression and r^2 for bottomfish was so low that it was not statistically significant from zero and could not be used. The slope and r^2 for the clams/mussels and crab regressions were significant but were very disparate. It appears that the clams/mussel and crab regressions were merged: Please clarify. These regressions should not be merged, as the resulting regression for the combined data would be meaningless.
- F The BSL derived from the regression is based on the premise or “prediction” that fish/ seafood containing approximately 0.18 mg/kg wet weight of mercury would be found in areas containing 1.2 mg/kg dry weight of mercury. Yet, Dungeness crabs having greater than 0.18 mg/kg mercury in their tissue (0.204, and 0.211 mg/Kg) were found in sediment containing only 0.54 mg/kg mercury. On the other hand, clams (from Eagle Harbor) in sediments containing more than 1.2 mg/ kg mercury, 1.30, 2.85, and 12.44, had 0.159, 0.091, and 0.091 mg/Kg mercury, respectively. Clearly, the regressions from which the BSL were calculated have very little relation to what is actually happening in Bellingham Bay.
- G Another concern regarding the derivation of the BSL and the crab regression is that the data set used to predict the regression line employed crabs with “averaged” tissue levels from 0.046 to 0.155 mg/kg wet weight, corresponding to sediment levels from 0.10 to 0.91 mg/kg dry weight, whereas the BSL is calculated to be 1.2 mg/kg of mercury in sediment, outside of the crab data set. Thus, the BSL essentially predicts “beyond the data set”. Whether this is warranted or not is unclear; supporting information to verify whether the regression line that extends beyond the data set would be defined by the same line is not included. If uptake of mercury is biphasic, the regression lines defining the relationship between sediment and tissue mercury concentrations can be different from one another.

- H The dataset used to derive the BSL should consist of seafood and fish from the Whatcom Waterway area, since uptake of mercury from the sediment is location - dependent. (Lawrence, A.L., and R.P. Mason. 2001. Factors controlling the bioaccumulation of mercury and methylmercury by the estuarine amphipod Leptocheirus plumulosus, *Environmental Pollution*: 11: 217-231, and Luoma, S. N. et al. 2005. Why is Metal bioaccumulation so variable? *Biodynamics as a unifying concept*. *Env. Sci. Tech* 39:1921-1931) The data set of Dungeness crab used to derive the BSL contained 23 samples from around Bellingham Bay, only 8 of which were from the Whatcom Waterway. The hardshell clam and mussel data contained 38 samples, with the vast majority (34) outside of Bellingham Bay, and none from the Whatcom Waterway. In light of this information, it is likely that the regression for hardshell clam and mussel is meaningless for Bellingham Bay.
- I The crab tissue data, which has the most statistically significant relationship between tissue and sediment and which has the greatest number of specimens taken from Bellingham Bay should be used to derive the BSL value, should this methodology be retained for the calculation of the BSL. Using the crab data, the calculated BSL would be 0.88 mg/kg sediment. This value is obtained by running the regression, just as the consultants at Anchor did, in the July 2000 RI/FS, with one significant deviation. Individual crab mercury concentrations found within a certain geographic area should be treated as individual samples, and not averaged before conducting the mathematical analysis. Averaging the samples serves to mask the variability of the crabs, and to dilute high mercury tissue values with low mercury values. Averaging before analysis can only happen if there is a reason to do so; in this case, each of the crabs caught are individual samples and averaging is not warranted.
- J The BSL calculation is in error because it uses a low consumption rate, whereas it should be using a conservative subsistence consumption rate. The conservative subsistence consumption rate used by EPA is 173 g / day /70 kg. Similarly, researchers found that the Tulalip, Squaxin Island, and Suquamish Tribes consumed 161, 133, and 168, g/ day/ 70 kg (Exposure analysis of five fish consuming populations for overexposure to methylmercury, January 2001, WA Dept of Health). In contrast, the consumption rate used for the Whatcom Waterway BSL model was 70g seafood/ day/ 70 kg person. In the absence of consumption rates from tribal peoples or subsistence fishers consuming seafood from Bellingham Bay, the conservative value of 173 g/day/70 kg must be used. **In order to justify the use of the lower 70 g number, the modelers used numbers from a regional study (Toy, et al. 1996. A fish consumption survey of the Tulalip and Squaxin Island Tribes of the Puget Sound region. Tulalip Tribes, Department of Environment), citing that the Tulalip and Squaxin Island Tribes ate approximately 70g/ 70kg/ day of shellfish and bottomfish. The modelers then assumed that local high-end consumers ate 70 g/ 70kg/ day of shellfish and bottomfish from Bellingham Bay. They did not however factor in potential mercury loading from other types of seafood, such as salmon, other pelagic fish, and tuna. This error is a serious underestimate of the potential**

18

19

20

21

risk to high-end consumers. In order to ensure that people are not ingesting too much mercury from seafood, the entirety of their likely mercury consumption from seafood consumption must be included, regardless of its source.

- K The regional Toy study used to develop the model cited that 8.3 g of bottomfish and 58.8 grams of shellfish eaten, whereas the BSL, referencing the Toy study, used values of 7.8, 23.4, and 38.5 g/day respectively for the consumption of bottomfish, crab, and clams and mussels. The Toy study did not break out the amount of mussels, clams, and crab eaten; it only listed amounts of shellfish. The modelers assumed that 23.4 g of crab, and 38.5g of clams and mussels were eaten, with no referenced source. Since the Dungeness crab samples used in the BSL calculation had significantly higher levels of Hg than other forms of shellfish, a truly “conservative” approach to BSL calculation would employ only the Dungeness crab regression data to calculate safe consumption for subsistence/tribal fishers consuming 173 grams per day. 22
- L The assumptions used to calculate the BSL are labeled as “conservative”, but several of the assumptions are not conservative. One assumption is that the model used “Conservative Tribal Fish and Shellfish Consumption Rates” as shown in items (J), the consumption rate is a vast underestimate. A second assumption labeled as conservative was the assumption that 100% of the mercury in tissue is methylmercury, and an overestimate of the risk by 10 to 30%. In fact, the vast majority of mercury (> 95 %) in seafood is methylmercury (Bloom, N.S. 1992. On the chemical form of mercury in edible fish and invertebrate tissue. Can J. Fish Aquatic Sci V 49: 1010-1017). A third assumption labeled as conservative is that 100% of the seafood ingested is assumed to be harvested from the Whatcom Waterway Site. Again, only 70 grams of the total 173 grams was assumed to be ingested from the Whatcom Waterway site. 23
- M If one were to try and use the relationship between seafood and sediment in a conservative manner, one would use the regression from the crab data and assume consumption of 173g/ 70 kg/day. Based on this calculation the BSL value would be 0.26 mg/kg. 24
- N The dataset used to model the BSL was a small data set and as such its statistical power is small. The uncertainty associated with using the small data set should be expressed. 25
- 26
- 27

Fish Consumption Rates for High Exposure Population Groups

Issue

What rule revisions are needed to incorporate new scientific information and federal guidance on the health risks for people consuming large amounts of fish and shellfish?

Problem Statement

The Model Toxics Control Act (MTCA) cleanup regulation includes methods for establishing surface water cleanup levels that are based on preventing health risks associated with the consumption of contaminated fish and shellfish.¹ The reasonable maximum exposure (RME) for MTCA surface water cleanup standards is based on a recreational angler exposure scenario.

Many sites being addressed under MTCA are located in the Usual and Accustomed (U&A) fishing areas for one or more tribes. Studies have shown that tribal members often consume much higher amounts of fish and shellfish than recreational anglers. Studies have also shown that other population groups (e.g., Asian-Pacific Islanders) residing near MTCA sites often consume fish and shellfish at much higher rates than recreational anglers. Consequently, exposure estimates based on a recreational angler scenario will generally underestimate fish and shellfish exposure for these population groups.

Ecology currently considers fish consumption rates for tribal populations and other high exposure groups when developing site-specific cleanup levels under the MTCA and the Sediment Management Standards (SMS) rules. This case-by-case approach can be resource intensive, can produce decisions that result in different levels of protection at different sites and often contributes to delays in cleanup decisions and actions.

Background

Under the Model Toxics Control Act (MTCA) Cleanup Regulation, cleanup levels are based on estimates of the “reasonable maximum exposure” (RME).²

- The RME represents a high end (but not worst case) estimate of individual exposures. It provides a conservative estimate that falls within a *realistic* range of exposures.
- The RME takes into account both current and reasonably foreseeable future conditions.

¹ The terms MTCA cleanup regulation and MTCA rule are used interchangeably and refer to Chapter 173-340 WAC.

² MTCA defines the RME as the “...the highest exposure that can be reasonably expected to occur for a human or other living organisms at a site under current and potential future site use.” CERCLA provides a similar definition “...the highest exposure that is reasonably expected to occur at a Superfund site...”

- The RME is defined as reasonable because it is a product of several factors that are an appropriate mix of average and upper-bound estimates. RME estimates typically fall between the 90th and 99.9 percentile of the exposure distribution.³

The MTCA rule includes methods for establishing surface water cleanup levels that are based on preventing health risks associated with the consumption of contaminated fish and shellfish. As noted above, the RME for MTCA surface water cleanup standards is based on a recreational angler exposure scenario. The rule also provides the flexibility to establish more stringent surface water cleanup levels when Ecology determines that such levels are "...necessary to protect other beneficial uses or otherwise protect human health and the environment..." (WAC 173-340-730(1)(e)). Ecology uses a similar case-by-case approach when establishing sediment cleanup standards under MTCA and the Sediment Management Standards.

There are several sites where Ecology has concluded that a recreational angler exposure scenario is not appropriate for situations involving population groups who consume much larger amounts of fish and shellfish. These groups include Native Americans, Asian Pacific Islander populations, and subsistence fishers. Ecology has discussed this issue with the MTCA Science Advisory Board and the Board has agreed with Ecology's overall conclusions. Ecology's conclusion is based on the following factors:

- The MTCA default exposure parameters are based on an exposure scenario (recreational fisher) that is significantly different than the exposure scenario for most tribal populations, Asian Pacific Islanders, and subsistence fishers.
- EPA-Region 10 has published a Decision-Making Framework for selecting and using tribal consumption data to establish cleanup requirements at federal Superfund sites.⁴ The framework identifies a four-tiered hierarchy of preferred data sources. Under the EPA Framework, exposure estimates for particular tribes can be based on fish consumption surveys from other tribes (Suquamish or Tulalip Tribes) with similar dietary habits. The exposure parameters specified in the EPA Region 10 Decision-Making Framework are significantly different than the MTCA default exposure parameters.
- EPA exposure guidance materials include exposure parameters based on tribal exposure scenarios. The EPA *Exposure Factor Handbook* recommends, for tribal exposure scenarios, an average ingestion rate of 70 g/day and a 95th percentile ingestion rate of 170 g/day.⁵ For children, the EPA *Child-Specific Exposure Factors Handbook* identifies weighted average (21 g/day), 90th percentile (60 g/day) and 95th percentile (78 g/day) values, respectively, for the tribal exposure scenario.⁶ These child-specific rates for

³ U.S. Environmental Protection Agency. 2004. An Examination of EPA Risk Assessment Principles and Practices. EPA/100/B-04/0001.

⁴ EPA Region 10 Framework for Selecting and Using Tribal Fish and Shellfish Consumption Rates for Risk-Based Decision Making at CERCLA and RCRA Cleanup Sites in Puget Sound and the Strait of Georgia, August 2007. Page 6.

⁵ U.S. Environmental Protection Agency. 1997. Exposure Factors Handbook. National Center for Environmental Assessment. Office of Research and Development. August 1997. Available at: <http://www.epa.gov/ncea/efh/>.

⁶ U.S. Environmental Protection Agency. 2006. Child-Specific Exposure Factors Handbook (External Review Draft). National Center for Environmental Assessment. Office of Research and Development. EPA/600/R/06/096A.

Native American children are significantly higher than estimates for recreational fish intake. The exposure parameters specified in these EPA guidance materials are significantly different than the MTCA default exposure parameters.

- Several Northwest tribes have developed surface water quality standards that are based on human health protection. The fish consumption rates used to develop those standards range from 6.5 to 170 g/day. More recent standards have generally used consumption rates much higher than the MTCA rule default fish consumption rate of 54 g/day.

New Scientific and Regulatory Information Since 2001 Rule Revisions

Since the 2001 rule revisions, there have been several important scientific and regulatory developments relevant to the current rulemaking process.

- Ecology has established cleanup standards at several sites that are based on tribal fish consumption scenarios. These represent site-specific interpretations of the narrative standards in the MTCA and SMS rules. In general, fish consumption rates used at these sites range from 50 to 300 g/day.
- EPA-Region 10 has published a Decision-Making Framework for selecting and using tribal consumption data to establish cleanup requirements at federal Superfund sites.⁷ The framework identifies a four-tiered hierarchy of preferred data sources. Under the EPA Framework, exposure estimates for particular tribes can be based on fish consumption surveys from other tribes (Suquamish or Tulalip Tribes) with similar dietary habits.
- Ecology asked the MTCA Science Advisory Board to review a site-specific consumption rate prepared by the Lower Elwha Klallam Tribe (LEKT). The LEKT recommended that Ecology establish cleanup requirements for the former Rayonier mill site in Port Angeles developed using the EPA Decision-Making Framework. The Board agreed with Ecology's conclusion that it was inappropriate to establish cleanup levels using a recreational exposure scenario.
- The Oregon Environmental Quality Commission approved the Oregon Department of Environmental Quality (ODEQ) plan to update Oregon's water quality standards for toxic pollutants using a new fish consumption rate of 175 g/day. This culminated a multi-year effort where ODEQ worked with EPA and the Confederated Tribes of the Umatilla Indian Reservation to conduct a series of public workshops exploring options. In reaching a decision on an updated value, the Oregon Environmental Quality Commission considered the results of an evaluation of available studies prepared by an expert advisory committee, the Human Health Focus Group.⁸ The Focus Group identified six studies that

⁷ EPA Region 10 Framework for Selecting and Using Tribal Fish and Shellfish Consumption Rates for Risk-Based Decision Making at CERCLA and RCRA Cleanup Sites in Puget Sound and the Strait of Georgia, August 2007. Page 6.

⁸ Oregon Department of Environmental Quality. 2008. Human Health Focus Group Report: Oregon Fish and Shellfish Consumption Rate Report. Water Quality Division-Standards and Assessment. June 2008.

they believe provide a scientific basis for establishing health protective requirements. The Focus Group summarized their conclusions in a table which is included at the end of this issue summary.

Rulemaking Options Being Considered

Ecology is considering several options for addressing this issue during the current rulemaking process. These include:

Narrative Standard: Under this option, Ecology would modify the MTCA rule to establish a clear narrative standard that includes an exposure scenario for tribal and other high exposure population groups. Cleanup levels would continue to be based on site-specific determinations.

Develop Guidance Materials: Under this option, Ecology would prepare guidance materials for implementing the current rule provisions. Guidance could be issued without regulatory changes or in tandem with regulatory changes. Guidance would be updated if needed after rule revisions are complete.

Criteria for Site-Specific Determinations: Under this option, Ecology would amend the MTCA rule to explicitly require site-specific determinations based on the narrative standards in the MTCA and SMS rules. The rule revisions would also include criteria and factors that would need to be considered when implementing the narrative standards.

Default Fish Consumption Rates: Under this option, Ecology would amend the MTCA rule to establish default fish consumption rates for sites located within Usual and Accustomed (U&A) areas or areas regularly used by other groups consuming large amounts of fish/shellfish. This option would also define factors that could be considered when modifying the default value for individual groups and sites.

Factors to Consider When Selecting Options

Developing amendments to the MTCA cleanup regulation will require consideration of a number of issues and interests. Ecology believes that the following factors need to be considered when evaluating this issue:

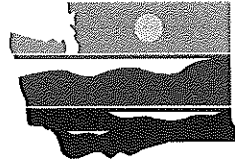
- Scientific information on tribal fish and shellfish harvesting and consumption habits and patterns, including study designs, results, and factors relevant to interpreting the study results (for example, evidence of suppressed consumption rates or resource switching).
- Scientific information on fish and shellfish harvesting and consumption habits and patterns for other high exposure population groups (for example, Asian Pacific Islanders).
- Federal and tribal regulatory requirements and guidance applicable to this issue (for example, consumption rates underlying federal and tribal water quality standards).
- Requirements in other state and federal laws and regulations. This includes methods and policies used to characterize fish consumption rates and the use of that information in regulatory decision-making.

- Whether other exposure parameters (for example, body weight, exposure duration, and fish diet fraction) should be adjusted when calculating cleanup levels.
- Whether particular options comply with key requirements of the Administrative Procedures Act.

The following table is from the Human Health Focus Group Report: Oregon Fish and Shellfish Consumption Rate Report. Water Quality Division-Standards and Assessment. June 2008.

| Table 3. Adult Fish Consumption Rates (gram per day) Recommended by the Human Health Focus Group for Oregon Human Health-Based Water Quality Criteria. (As printed in Oregon DEQ 2008) | | | | | | | | |
|--|--|------|-----------|--------|------------|------|------|------|
| Group | Species included in consumption rate evaluation | N | Statistic | | | | | |
| | | | Mean | Median | Percentile | | | |
| | | | | | 75th | 90th | 95th | 99th |
| Tulalip Tribe | Anadromous and estuarine finfish and shellfish | 73 | 72 | 45 | 85 | 186 | 244 | 312 |
| Suquamish Tribe | Anadromous and estuarine finfish and shellfish | 284 | 214 | 132 | NA | 489 | NA | NA |
| Squaxin Island Tribe | Anadromous and estuarine finfish and shellfish | 117 | 73 | 43 | NA | 193 | 247 | NA |
| Columbia River Tribe | Freshwater and anadromous finfish | 512 | 63 | 40 | 60 | 113 | 176 | 389 |
| Asians & Pacific Islanders | Anadromous and estuarine finfish and shellfish | 202 | 117 | 78 | 139 | 236 | 306 | NA |
| U.S. General Population | Freshwater, anadromous, estuarine and marine finfish and shellfish | 2585 | 127 | 99 | NA | 248 | 334 | 519 |

N = Number of Adults
 NA = Statistical value not available
 Adults are 18 years or older for all surveys except Suquamish; Suquamish adults were 16 years or older.
 All values reported in this table are described in Table 1 (located at the end of this document)
 Tulalip Tribes and Squaxin Island Tribe from Toy et al. 1996.
 Suquamish Tribe from Suquamish. 2000.
 Columbia River Treaty Tribes from CRITFC. 1994.
 The Columbia River Tribes did not report marine fish consumption;
 The 75, 90, 95, and 99th percentiles are interpolated from percentiles reported in CRITFC. 1994.
 Asian Pacific Islanders from Sechena et al. 1999.
 US General Population from US EPA. 2002b.



DEPARTMENT OF
ECOLOGY
State of Washington

Comment Form

Whatcom Waterway Consent Decree First Amendment

Comments must be received by 5 p.m. April 11, 2011

Thank you for participating in today's meeting. If you wish to submit a written comment, you may use this form. **Please place your comment form in the Comment Box before you leave.** You may also mail this form to: Department of Ecology, attention Lucy McInerney, 3190 160th Ave SE, Bellevue, WA 98008 or e-mail your comments to Lucy McInerney at lucy.mcinerney@ecy.wa.gov. Please indicate the Whatcom Waterway Site in your subject line.

Ecology will review and respond to your comments. Responses to all comments will be included in a responsiveness summary. The summary will be made part of the public record and mailed directly to those who comment following the public comment period. Comments will also be posted on Ecology's Whatcom Waterway webpage at www.ecy.wa.gov/programs/tcp/sites/whatcom/ww.htm

Please print clearly

Name: Dean F Ringenbach

Organization/Neighborhood: member of ILWU Local #7

Mailing Address: df63116@yahoo.com or 4670 Wade St #201

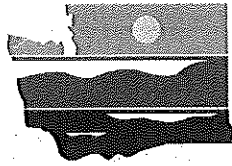
City: Bellingham State: WA Zip: 98226

Email: df63116@yahoo.com

Phone Number: (360) 220-7192

Comments (if you need more space, please use the backside.):

I am in favor of the new plan.
The ~~old~~ plan and that option has run its
course and too costly.



Commenter 17
RECEIVED
APR 06 2011
DEPT OF ECOLOGY
TCP-NWRO

Comment Form

Whatcom Waterway Consent Decree First Amendment

Comments must be received by 5 p.m. April 11, 2011

Thank you for participating in today's meeting. If you wish to submit a written comment, you may use this form. **Please place your comment form in the Comment Box before you leave.** You may also mail this form to: Department of Ecology, attention Lucy McInerney, 3190 160th Ave SE, Bellevue, WA 98008 or e-mail your comments to Lucy McInerney at lucy.mcinerney@ecy.wa.gov. Please indicate the Whatcom Waterway Site in your subject line.

Ecology will review and respond to your comments. Responses to all comments will be included in a responsiveness summary. The summary will be made part of the public record and mailed directly to those who comment following the public comment period. Comments will also be posted on Ecology's Whatcom Waterway webpage at www.ecy.wa.gov/programs/tcp/sites/whatcom/www.htm

Please print clearly

Name: HEROY RONDE

Organization/Neighborhood: International Longshoreman & Warehousemen's Union
(Local #7, Bellingham WA.)

Mailing Address: State St.

City: Bellingham State: WA. Zip: 98226

Email: ditchdigger7@gmail.com

Phone Number: 360-739-9706

Comments (if you need more space, please use the backside.):

Dear Ms. McInerney,

We would like to thank you, and the DOE for the work that has been done with the Port of Bellingham in formulating this amendment to the existing Consent Decree.

We believe that the dredging and clean up of the Whatcom Waterway are key in the safeguarding of the environment of Bellingham Bay, and can also facilitate the Port of

1

Bellinghams ability to compete for Cargo Shipping thru increased draft.

We also believe that by utilizing the former G.P. treatment lagoon for depositing the toxic sediment from the waterway will provide cost savings to taxpayers at all levels.

It is our hope that this amended consent decree will move forward, and clear the way for this project to finally get underway.

Sincerely,

Jimmy Rodde
President,

I.L.W.U. Local #7

Bellingham WA.

From: Joe Schmidt [<mailto:joeschmidt22@msn.com>]
Sent: Sunday, April 10, 2011 5:20 PM
To: McInerney, Lucy (ECY)
Subject: whatcom waterway site

Dear Ms. McInerney,

I am writing to you regarding the Whatcom Waterway. As a lifelong resident of Whatcom County I feel that my opinion should be heard and considered.

It is necessary for the Whatcom Waterway Clean-Up plan to move forward immediately. The longer it is postponed the more costly it becomes. This is a situation that needs to be acted upon without further delay. Each and every day that the Department of Ecology refuses to act upon this increases the financial burden of the taxpayers of Whatcom County. This project should have been completed a very long time ago and it is disgraceful and wasteful that nothing has been done.

The time is now. Get the job done!

Respectfully,

Joe Schmidt

1

1457 Grant Street
Bellevue, WA 98225-4920
April 22, 2011

RECEIVED

APR 26 2011

DEPT OF ECOLOGY
TCP-NWRO

Lucy McInerney, Site Manager
WA Dept of Ecology
3190 - 160th Ave SE
Bellevue, WA 98008-5452

Ms McInerney et al,

I think it is a great solution to use the existing aeration lagoon (Unit 8) for collection of contaminated sediments from Whatcom Creek waterway, but I feel it is a bad idea to flood it with seawater to use it as a marina.

1

Collecting contaminants in the existing lined pond would serve several functions:

2

Over time the capped material can compact. Storage capacity is greatly increased if accumulated above tidal levels, and the upper layers would be allowed to drain.

Capping should exclude rainfall from the sediment.

The accumulation should be monitored and sampled. Penetrating wells could be designed in to allow pumping and removal of contaminated liquid, allowing compaction and reducing outflow pressure.

Flooding Unit 8 with seawater and creating a tidal lagoon makes the goals problematic. Immersion under seawater is a contradiction to capped, and managed storage. Daily tidal flows (and pressures) would act to saturate and spread the contaminants. Numerous boaters in a marina would have the potential to damage any cap from dropped anchors, chain, tools, crabtraps, etc.

3

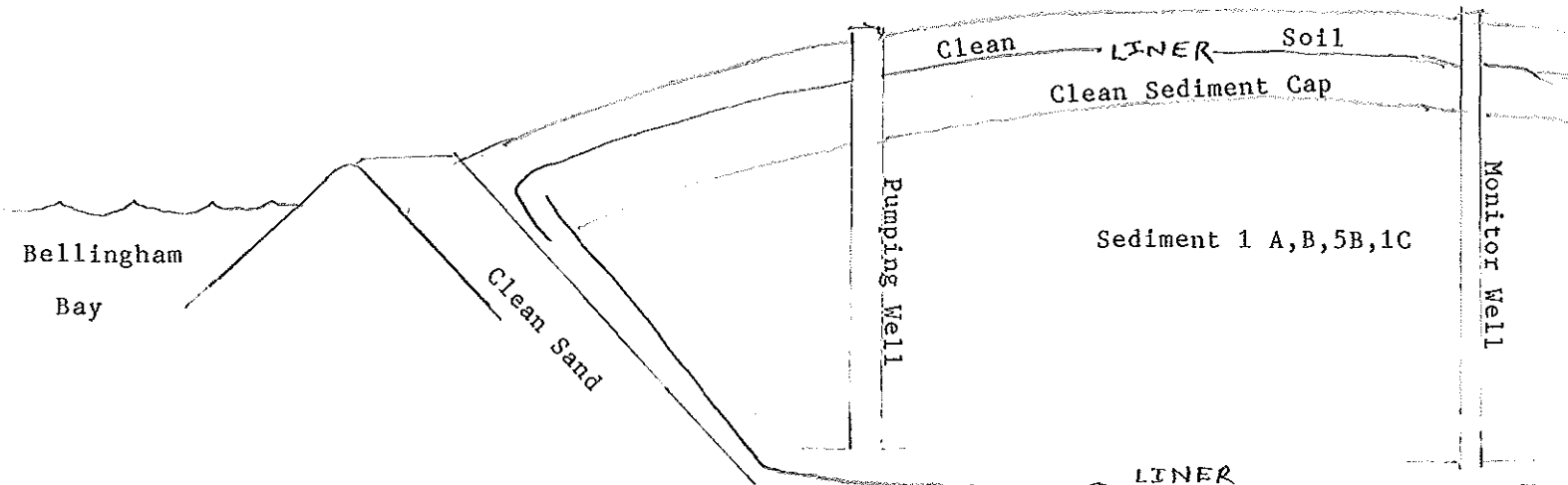
The Port of Bellingham seems to have tunnel vision focused on a new marina to the exclusion of proper storage of the dredged sediment. Immersing that material allows any leakage to wash steadily into our water with little means of accounting for that flow. It is irresponsible and a bit devious.

Accommodating the Port of Bellingham's marina agenda for a few hundred boaters should not be the primary design element when we are studying permanent storage of decades of pollution, a legacy weighing upon the shoulders of thousands of county residents.

Sincerely,

Darol Streib

Darol Streib



Note: The existing aeration pond in not now a lagoon (its not subject to tidal flows).



Comment Form

**Whatcom Waterway Consent Decree
First Amendment**

Comments must be received by 5 p.m. April 11, 2011

Thank you for participating in today's meeting. If you wish to submit a written comment, you may use this form. **Please place your comment form in the Comment Box before you leave.** You may also mail this form to: Department of Ecology, attention Lucy McInerney, 3190 160th Ave SE, Bellevue, WA 98008 or e-mail your comments to Lucy McInerney at lucy.mcinerney@ecy.wa.gov . Please indicate the Whatcom Waterway Site in your subject line.

Ecology will review and respond to your comments. Responses to all comments will be included in a responsiveness summary. The summary will be made part of the public record and mailed directly to those who comment following the public comment period. Comments will also be posted on Ecology's Whatcom Waterway webpage at www.ecy.wa.gov/programs/tcp/sites/whatcom/ww.htm

Please print clearly

Name: William Timmer
 Organization/Neighborhood: Bellingham Longshore Inc.
 Mailing Address: 807 North State St.
 City: Bellingham State: WA Zip: 98225
 Email: N/A
 Phone Number: (360) 734-0950

Comments (if you need more space, please use the backside.):

I approve of Ecology's proposed cleanup of the
 Whatcom Waterway for seven million. The more expensive
 cleanup disposal is not needed. The dredging and
 cleanup needs to start as soon as possible and
 Ecology's proposed seven million plan will accomplish that.

From: Darren C. Williams [<mailto:williamsdarrenc@msn.com>]
Sent: Friday, April 08, 2011 10:18 AM
To: McInerney, Lucy (ECY)
Subject: Whatcom Waterway Consent Decree First Amendment

Dept. of Ecology
 Attn: Lucy McInerney

My name is Darren Williams and I am a life time resident Whatcom County. Born and raised on the South Side of Bellingham (Fairhaven). I have seen the many changes to Bellingham Bay over the last 50 years, most of them being for the better. I remember as a child my parents kept me and my sisters out of the water of Bellingham Bay because of the raw sewage that was dumped directly into the bay. I also remember the debate about building a sewage treatment plant. Even at that time there were people apposed to that project. And now you wonder how that could be. The point I'm trying to make is there are always a certain number of people apposed to any project. And some times the goal is just to stop change of any sort. So please keep that in mind as you consider the comment that are made about this project.

My opinion of Whatcom Waterway Consent Decree First Amendment is completely favorable. I think the staff at the D.O.E. and Port of Bellingham have done the best they could in dealing with the new dioxin and furan levels being too high for open water disposal. The option of placing some of the waterway sediment into an over dredged unit 8 and then capping it seems to be the best available option. I think it's ever important that we move forward on the clean-up as soon a possible. The economic impact get higher with every day that go's by. If you look at the cost of this clean-up it has increased with every year that has gone by. It will soon be at a leave that no one can afford. Therefore to completely throw out what has already been agreed to and start over would be a waist of time we can't afford.

And as a longshoreman I'm also very interested in the Ports ability to maintain operations at the shipping terminal. That is becoming more and more difficult ever day. The channel needs to be dredged for the terminal to stay competitive in today market. If we were to lose the shipping terminal, it would certainly be one more economic impact the community does not need.

In closing I would urge the acceptance of the amendment and to move forward with the clean-up in the most timely fashion possible.

Sincerely,

Darren Williams
 4089 Y Rd
 Bellingham, Wa 98226

1