



# Duwamish River Cleanup Coalition

Community Coalition for Environmental Justice • Duwamish Tribe • ECOSS • Georgetown Community Council • IM-A-PAL • People for Puget Sound • Puget Soundkeeper • South Park Neighborhood Association • Washington Toxics Coalition • Waste Action Project

April 7, 2005

Mr. Ravi Sanga  
U.S. EPA Region X  
[Sanga.Ravi@epamail.epa.gov](mailto:Sanga.Ravi@epamail.epa.gov)

**Re: Draft Terminal 117 Early Action Area Engineering Evaluation/Cost Analysis, Lower Duwamish River Superfund Site**

Dear Mr. Sanga:

The Duwamish River Cleanup Coalition (DRCC) is EPA's Community Advisory Group for the Duwamish River Superfund Site. DRCC represents ten organizations affected by the health of the Duwamish River and the plans for river cleanup, including the South Park Neighborhood Association, the South Park-based Environmental Coalition of South Seattle (ECOSS) and IM-A-PAL Foundation, the Georgetown Community Council, Duwamish Tribe and five regional environmental, social justice and health advocacy organizations. DRCC's members hold the State of Washington Public Participation Grant for the Duwamish River Superfund Cleanup and EPA's Technical Assistance Grant for the site, which provides funding for technical experts for the community.

DRCC has reviewed the Draft Engineering Evaluation/Cost Analysis (EE/CA) for the Terminal 117/Malarkey Asphalt Early Action Area. **We are extremely concerned about the shortcomings and incomplete nature of the EE/CA, and cannot support the proposed cleanup alternative as presented.** We urge EPA to significantly revise and improve the document, then re-issue it for complete public review.

## Introduction

EPA and the Department of Ecology (Ecology) have proposed a cleanup plan for the Superfund "Early Action Area" at the former Malarkey Asphalt property (Terminal 117) in South Park on the Duwamish River. The cleanup plan is part of the "early action" or fast track process EPA and Ecology are using to clean up some of the most toxic areas of the river quickly, based on known high risks to the environment and human health. The shoreline of the T-117 property – including some submerged, intertidal and bank sediments and soils – would be removed, capped and transported to a landfill under the proposed plan. The cleanup is designed to target PCBs (polychlorinated biphenyls) – a group of toxic chemicals – in the river bottom and bank. The site is also contaminated with PAHs as well as metals and SVOCs in the upland soils. The Port and City of Seattle have proposed to conduct the work during the spring of 2006.



The EE/CA is intended to describe the site and evaluate alternatives for cleanup. Unfortunately, the site is inadequately – indeed, incompletely – characterized in the EE/CA, leaving significant questions about what needs to be cleaned up during the removal action and further, what needs to be controlled to protect the cleanup area from recontamination over the long term. In addition, the proposed plan fails to adequately safeguard the environment and human health. DRCC is extremely concerned that EPA and Ecology are sacrificing quality for speed in its first cleanup proposal for the Duwamish River, and we are unable to support the proposed action.

Our concerns are detailed below. In brief, our areas of major concern include:

- Incomplete definition of site conditions at the T-117/Malarkey property
- Incomplete cleanup of PCBs in riverbank, uplands and sediments
- Potential for ongoing sources to recontaminate the site after cleanup
- Lack of a plan for safety of transport of contaminated waste through neighborhood
- Lack of definition of dredging technology and methods to prevent resuspension
- Inadequate cap design may lead to failure
- Lack of treatment for contaminated sediments
- Incomplete evaluation of available alternatives
- Removal of critical decisions from legally-required public review process

Overall, EPA and Ecology’s proposed Alternative 1 is more protective than Alternative 2. However, after consultation with our technical advisors, agency staff and community representatives, DRCC cannot support either alternative until the problems discussed in our comments below are addressed.

## GENERAL COMMENTS

### 1. The EE/CA is incomplete

The EE/CA leaves out critical pieces of information and fails to fully characterize or describe site conditions and certain elements of the cleanup plan. While there has been some discussion of including some of this information in future documents, several of these elements are critical, required components of a Superfund EE/CA, and should be provided here. Only the EE/CA is legally subject to public review and comment. It is not acceptable to postpone information or decisions that are critical to the success of the plan and should be subject to formal public review to future “design” or contractor-dependent documents.

- **Upland Boundary**

The upland boundary of the site presented in the EE/CA is incomplete. As currently described, the upland boundary follows the asphalt pavement placed on site following a 1999 Superfund cleanup of a portion of the property:

“The existing pavement edge....is thus set as the limit of the T-117 removal boundary to protect the integrity of the existing cap and capped soil.” (p. 44)



However, the northern portion of the upland boundary, *which is not part of the previous cleanup*, cleaves an area of greatly elevated PCBs (~1,000 mg/kg-OC), leaving high-level – in fact, TOSCA level – PCBs in place. The draft EE/CA states:

“In the areas of the bank with higher PCB values, the Port and the City will consult with EPA and Ecology, during the design phase, regarding the possibility of removing additional high PCB soils. This removal may include portions of the existing asphalt cap where appropriate.” (p. 44)

The caveat is intended to respond to previous stakeholder comments requesting that the elevated PCBs be removed as part of the cleanup action. However, deferring this issue to a “design” question is inadequate. Not only is the proposed boundary an integral part of any complete EE/CA, as CERCLA rules require, but it is only subject to public review as a part of the EE/CA. The design “consultation” referred to carries no legal weight and is only considered as a “possibility.” In direct contradiction to this statement, the EE/CA continues to state throughout the alternatives analysis that the removal action is limited by a requirement that it not disturb any portion of the “existing pavement cap,” even where it serves only as a parking lot.

Clearly EPA is in fact considering disturbing the parking lot asphalt, and this boundary consideration needs to be incorporated into the EE/CA boundary definition with the required public review. The site and boundary conditions need to be fully characterized, and further removal incorporated into the EE/CA as an alternative for consideration.

The proposed boundary is also incomplete in its lack of vertical definition (depth). While the inter- and sub-tidal portions of the site and proposed boundary are fairly well defined, the upland and bank portions of the boundary are incomplete. The site needs to be fully characterized (see below), so that the vertical (3-D) definition of the boundary can be completed.

Further issues on the upland boundary will be discussed in additional sections below.

- **Site Characterization**

The boundary definition discussed above relies on a complete site investigation and characterization, which has not yet been presented. There is little data on PCB or other contaminant levels at depth in the bank, and virtually no data at all on PCB concentrations in the upland soils adjacent to the proposed boundary and cap. The northern portion of the upland property has not been characterized. The property is now paved with a thin (4”) cover of asphalt, but that does not preclude sampling to determine the extent of PCB contamination. This is critical not only for the short-term cleanup action boundary, but also for long-term source control needed to prevent recontamination.

In addition, it is unclear whether the upland boundary – which has been set at the edge of the pavement – actually captures all of the bank PCBs along the length of the property. The EE/CA suggests that the pavement boundary is level with the boundary of the former upland Superfund cleanup. However, it is not clear whether the



pavement cap purposely or incidentally extended beyond the actual cleanup boundary (caps typically extend beyond the footprint of a remedial action for structural integrity). DRCC has previously requested data on the exact location of the removal action relative to the pavement boundary, but has not yet received this data. Along the length of the property, the interface between the “bank” and the “upland” has not been inadequately sampled, and, as previously stated, much of the adjacent uplands have not been characterized at all. With this incomplete information, it is impossible to know if the proposed cleanup actually leaves behind a swath of PCB contaminated soils along the top/inland portion of the riverbank running the length of the property. These would pose an ongoing recontamination source and public health threat. This question needs to be decisively answered with existing data or through additional investigation.

While we understand that on-site conditions can and should drive adaptations during design and construction as circumstances require, it is not acceptable to leave as unresolved basic determinations such as site characterization and proposed boundaries. If there is inadequate information available to complete the characterization and site boundaries required by the EE/CA, then this information should be collected and integrated into a revised EE/CA for public review. The public cannot provide informed comment on the adequacy of an incomplete plan.

## **2. The proposed cleanup leaves PCBs behind**

The EE/CA is intended to describe a non-time critical removal action at the T-117 Early Action Area. The riverwide “Phase 2” RI/FS will determine cleanup activities outside of the completed Early Action Areas. However, the EE/CA should describe a complete cleanup plan *for the T-117 Early Action Area*. We do not believe that the proposed plan accomplishes this. The cleanup boundary for the proposed plan does not include the entire footprint of PCBs at the T-117 site and adjacent river sediments, despite ongoing risks to the environment and human health if these contaminants are left behind.

- **PCBs in river sediment**

The draft EE/CA proposes a cleanup boundary in the inter- and sub-tidal portions of the river that would leave behind PCBs at levels that pose a continuing risk to the benthic community – the base of the Duwamish River food web. Based on existing data, a very slight extension of the proposed cleanup boundary would succeed in capturing most if not all of the known remaining PCB concentrations exceeding the Washington State Sediment Management Standard of 12 mg/kg-OC, which the EE/CA uses as the “project cleanup standard.” Despite identifying a protective level of 12 mg/kg-OC as the project cleanup standard, the EE/CA inexplicably stops short of including all sediment concentrations greater than 12 mg/kg-OC in the proposed cleanup area, even though their inclusion would have a negligible effect on the size of the cleanup area. As justification, the EE/CA states:

“The boundary is configured such that the area outside of the removal area extending to the navigation channel line and up to 300 feet north and south of the boundary will have an average PCB concentration (8.4 mg/kg-OC) and 95% UCL



(10.3 mg/kg-OC) below the PCB SQS criteria of 12 mg/kg-OC, which is protective of the benthic community.”

This statement, or at least what it attempts to imply, is simply incorrect. An average concentration below 12 mg/kg-OC PCBs is not protective of the benthic community. According to the Sediment Management Standards encoded in Washington State law, an exceedance of 12 mg/kg-OC PCBs is harmful to the benthic community. The environmental risks are not based on average concentrations. An exceedance of 12 mg/kg-OC within the area where concentrations are being averaged is still harmful to the environment. The EE/CA statement is a misleading or erroneous interpretation and should be stricken from the document. The boundary of the T-117 cleanup area should be marginally extended to capture all recorded exceedances of the state SQS and stated project cleanup standard of 12 mg/kg-OC.

It should also be noted that Duwamish River bottom fish already pose a human health risk. The Washington State Department of Health has issued a consumption advisory for bottom fish and crab from the river. It is highly unlikely that “isolated” PCB levels of between 12 and 65 mg/kg-OC will be removed as part of the Phase 2 Riverwide cleanup (e.g., sediments above 12 mg/kg-OC and below the cleanup standard of 65-OC mg/kg will likely not be cleaned up if they are not adjacent to unremediated sediments above the cleanup level of 65 mg/kg-OC). The end result, therefore, of not including these sediments in the T-117 Early Action Area will likely be lesser cleanup in the end as a result of diverting consideration of these sediments to the Phase 2 RI. The end result would be sacrifice of overall quality of cleanup for speed – an unacceptable result.

- **PCBs in the riverbank**

The proposed cleanup boundary in the northwestern portion of the property would cleave through an area of known high-level PCBs (~1,000 mg/kg-OC), exposing highly elevated PCBs to the environment, immediately adjacent to the proposed cap, and leaving the inner portion in place. The plan proposes to make no effort to follow the PCB footprint to find and form the boundary where the riverbank soils are “clean,” or below 12 mg/kg-OC (upland soil standards are 1 ppm (mg/kg) rather than 12 mg/kg-OC, so depending on where the actual boundary was located, more restrictive standards may need to be applied). In addition, soils along the length of the riverbank boundary have not been adequately characterized (see above) and may need to be removed inland of the proposed western boundary. It is critical to characterize and remove these riverbank soils/sediments in order to complete and protect the environment and human health and to prevent recontamination. This is especially critical given the limitations of the cap in containing such elevated PCB concentrations (see below). In short, all PCBs above 12 mg/kg-OC in or adjacent to the riverbank should be removed with the cleanup.

- **Upland PCBs**

With the exception of the area remediated during the 1999 upland Superfund cleanup, the upland soils have been poorly characterized, or not at all. It is impossible to evaluate the appropriate placement of the upland boundary, or implement source



control actions required to prevent recontamination, in the absence of this data. It is absolutely essential that the site be fully characterized and this data be presented in a revised EE/CA. Upland boundary questions that remain unresolved are:

- the appropriate boundary of the cleanup required to remove contamination in the south ditch,
- the appropriate inland extension of the boundary required to capture PCBs along the western boundary (riverbank/upland interface), and
- the extent of upland removal required within the northern portion of the T-117 property and in the neighboring marina.

At present, there is little information on the nature and extent of contamination beneath the paving, particularly in those areas where soil samples already show the most elevated PCB levels. PCBs are clearly present at the immediate edge, and it is not unreasonable to assume that a single soil sample is characteristic of the surrounding soils. Those soils extend beneath the paving. Yet there is little information on whether the PCBs are residuals from a past spill, if there is a leaking barrel under the paving or a transformer was buried there. Both leaking barrels and buried waste containers and transport lines have been found at and under the site in recent years, yet the entire property has still not been fully investigated to determine if and where additional waste sources exist.

This site will require continued monitoring, and leaving residual PCBs in place will only increase the need to monitor the soils, sediments, water and biota for years to come; in fact, indefinitely. Only by monitoring can EPA and Ecology assure the citizens that the contamination left behind does not pose a threat to human health and the environment. Over the long term, the monitoring required – and possible subsequent cleanups needed – could easily exceed the cost of full characterization and cleanup now.

### **3. Ongoing sources need to be identified and controlled**

The Draft EE/CA does not fully identify all sources of contamination. Until all sources are identified, no plan for site cleanup can be effective over the long term. Newly contaminated sediments may begin to accumulate from unidentified sources, leading to recontamination of the site. It is vital to identify all sources to insure the success of any cleanup project.

While DRCC is aware that the Department of Ecology is currently developing a Source Control Action Plan for the T-117 site, and that some source control activities have already begun or been implemented in the surrounding area, the cleanup action for the site must be informed by a comprehensive understanding of source control requirements that may influence boundary definition and design. For example, if the upland PCBs left behind by the proposal to cleave the “hotspot” in the northern portion of the site poses a recontamination risk, that information needs to be fully presented and considered as part of the EE/CA. Similarly, if catch basin sampling shows renewed accumulation of PCBs despite the adjacent road dust and stormwater control work, the remaining sources will need to be identified and controlled. In addition, the source of PCBs already identified in



seep samples has never been definitively determined; the EE/CA assumes that the source is surface entrainment of contaminated sediment, but offers no data on confirmatory investigations needed to make this determination, despite repeated requests by DRCC. These unknown source issues and many others could make the cleanup effort moot if not fully investigated, identified and controlled.

#### **4. Transportation/safety plan missing**

DRCC does not support the transport of contaminated sediments from the T-117 site to an upland disposal site. However, given that the current Draft EE/CA proposes to transport and landfill T-117 soils and sediments, it is necessary to provide a description of how excavated wastes will be transported by water and overland to minimize risks and impacts to the river and the surrounding community. The EE/CA needs to include a detailed section to discuss these issues and present a transportation and safety plan. The description should include information regarding hours of operation, number of trucks and barges hauling contaminated sediment through the neighborhood and along the river, anticipated routes, containment plans for soils and sediments being transported, spill response plans, etc.

It is essential that the community have an opportunity to review and comment on how these wastes will be transported through their neighborhood and along their waterfront. The EE/CA should be revised and reissued to allow opportunity for public review of these plans.

#### **5. Dredging technology and BMPs**

The T-117 EE/CA does not include a determination of the most protective dredging technology for the site and does not include a description of Best Management Practices (BMPs) required to prevent resuspension and migration of contaminated sediments during removal from the river. As EPA and Ecology know, these issues are of great concern to the community, and have been the focus of much public attention. The issue has been “high profile” since the selected dredging technology and BMPs failed to prevent resuspension and the spread of contamination during cleanup of the Duwamish/Diagonal CSO Early Action Area on the Duwamish in 2003–04. The community’s and DRCC’s concerns about resuspension at the T-117 site are even greater, due to the site’s close proximity to marina and waterfront tenants and residents and popular public access areas on the river.

The EE/CA proposes to defer dredging technology and BMP selection to future contracting and monitoring documents. However, these documents do not include formal public review by the affected community. While EPA has agreed to allow informal review of BMP and monitoring plans, this is not sufficient to guarantee the public a voice as the review is offered as a courtesy to, rather than a right of, the public. There is no avenue available for the public to have an even informal opportunity to review the dredging technology selected, as this is being deferred to the project contractors, not regulatory or proponent public agencies. These determinations and plans should be included in the EE/CA.



DRCC commissioned a site specific review and recommendations for dredging and treatment technologies for the T-117 Early Action Area in 2004. The review was conducted by Dr. Peter deFur of Environmental Stewardship Concepts in Richmond, Virginia. Dr. deFur has extensive experience as a technical reviewer and advisor on numerous Superfund sites and local toxic cleanups around the country, including the Hudson, Fox and Housatonic River Superfund Site, and the Port Angeles MTCA site. His clients include the U.S. Army Corps of Engineers, U.S. EPA, Fort Ord Environmental Justice Network and the Sierra Club. Dr deFur's vitae is attached.

DeFur's report, included as an attachment to these comments, recommends land based-dredging of the riverbank and uplands, similar to the Draft EE/CA proposal. DRCC supports this approach, with appropriate safeguards and BMPs in place to protect and seal the site during daily high tides that would submerge the exposed bank sediments. The current plan does not discuss the appropriate BMPs. In the inter- and sub-tidal zones, deFur recommends hand-held hydraulic dredging, similar to that used recently on the Duwamish River by The Boeing Company, at its storm drain cleanup within the Norfolk CSO Early Action Area. While the T-117 site would likely generate more water, there is sufficient space available at the T-117 upland property to employ a similar railcar dewatering system as that used by Boeing. DRCC recommends this dredging technology be used in conjunction with silt curtains and other appropriate BMPs to minimize resuspension and transport of contaminated sediments. The dredging technology and BMP requirements should be included in the EE/CA for full public review.

## **6. Cap design is inadequate**

DRCC's review of protective models and designs for aqueous caps indicates that the EE/CA's proposed cap design is not sufficient to guarantee protection of the environment and human health over the long term.

The proposed cap, which must be effective in containing contaminated sediment levels of 1,000 mg/kg-OC PCBs or more, does not meet design requirements for protection of the environment. While it is not possible to recommend specific specifications for cap design without knowing the soil PCB levels to be contained, it fails to meet Washington State MTCA requirements, which provides guidelines for design of caps to contain an upper limit of 10 mg/kg-OC PCBs. In aquatic environments far more stable than the intertidal conditions present on the Duwamish, caps consisting of ~3 feet of sand alone are generally required. Additional layers required for cap design and stability, as well as fish-friendly habitat cover, would increase the thickness of the proposed cap to ~5–6 feet. The EE/CA proposes a cap of filter fabric, quarry spalls, and a surface layer of sand and gravel in the upland, bank and mudflat zone, and of sand, armor and surface sand and gravel in the submerged zone. The proposed cap depth is 3 feet in all – inadequate according to established models. In the case of T-117, PCB levels left behind in the bank need to be (1) characterized and (2) removed to levels that can be safely contained with a cap that meets the requirements of Washington State MTCA regulations.

In addition, despite the best design and planning efforts, caps fail. They degrade over the long term, require long-term monitoring (which raises project costs) and may fail



completely under irregular or catastrophic conditions. The scouring caused by flood cycles on the Duwamish, prop disturbance by large vessel traffic, and the site's location within a major seismic fault zone argue for minimizing the need for capping in order to protect the site. The proposed Alternative 1, though more protective than Alternative 2, still relies too heavily on capping to contain contaminants in the bank and uplands, particularly within the northern/marina portion of the cleanup area, where the PCB levels are highest.

The northern/marina cleanup plan also relies on a sheet pile wall to contain upland contamination and prevent erosion. However, water and oil or NAPL – both of which may transport PCB contaminated particles to the river, will flow around and under an impervious barrier such as sheet pile. This may cause new pathways for PCB migration to the river. In addition, it appears that the plan calls for leaving an area with high PCB concentrations in place along the exposed riverbank between the sheet pile and the proposed removal and cap (see Figure 5–1). This clearly poses a risk of recontamination and needs to be clarified or corrected in the revised EE/CA.

DRCC recommends full removal of PCB contaminated soils and sediments above 12 mg/kg-OC, and a cap design consisting of at least 3' sand over any remaining contamination left in place. It is important to note that this approach can only be expected to work if ongoing sources of contamination to the site are fully identified and controlled.

#### **7. Plan should include treatment of toxic material**

The Draft EE/CA dismisses treatment as a viable option for the T-117 sediments. The analysis relies in part on the Draft Candidate Technologies Memorandum (CTM) for the Lower Duwamish River (2005), which identified several potentially applicable and feasible treatment technologies for the Duwamish site. The EE/CA then attempts a site-specific analysis of the identified technologies. The EE/CA analysis, however, is shallow and flawed.

In 2004, DRCC commissioned Dr. Peter deFur of Environmental Stewardship Concepts, an EPA-funded Technical Advisor to the community, to evaluate and recommend site-specific cleanup technologies for the T-117 Early Action Area. Dr. deFur's report recommends treatment of the T-117 bank soils and sediments with an enhanced sediment washing/treatment technology developed by BioGenesis. This is one of the technologies the 2005 Draft CTM identifies as a potential feasible treatment technology for Duwamish River sediments. Dr. deFur's recommendation of the BioGenesis process is based on site-specific conditions at the T-117 site. His report is attached.

The Draft EE/CA identifies transport and disposal in a landfill as the preferred fate for T-117 sediments. However, the EE/CA's discussion of material transport, disposal and treatment alternatives is flawed by several faulty assumptions and oversights.

Transport to the Roosevelt Regional Landfill by the Regional Disposal Company requires handling dredged material at a barge-to-rail loading facility, but the company does not currently have such a facility in proximity to the Duwamish. The EE/CA mentions, but



then seems to dismiss, this possible barrier. In addition, the majority of upland excavated material would be transported by truck to a RDC transfer facility, but it does not mention where this facility is located. There are currently several transfer facilities involved in renewal/re-siting controversies, and several surrounding and nearby neighborhoods have made their opposition to such facilities very clear. Given the local concerns of the South Park neighborhood about impacts of transport of the T-117 waste materials through their own neighborhood, the community is reluctant to support a plan that would route this waste into or through other communities over their objections. The community is also aware of the incident during transport of Duwamish/Diagonal sediments to Roosevelt Landfill, in which three rail cars full of contaminated sediments were spilled as a result of a derauling during transport. Finally, many community members testified at the public hearing and have commented in writing and to DRCC representatives that they are opposed to any plan that would simply move contaminated sediments from one medium and location to another. These are all concerns and issues that need to be taken into consideration in the final decision.

The report focuses on the disadvantages of treatment technologies while ignoring the benefits of treatment and removal. The over-emphasis on capping and landfilling does not reflect the persistent nature of the contaminants or the health risks posed to communities over the long term.

The EE/CA states that: “Based on the [BioGenesis] demonstrations in the NY/NJ harbor region that were supported by large experimental technology grants, sediment treatment has the potential to become a viable alternative for sediments in the future. However, the total cost and overall feasibility of treatment must first approach the cost and feasibility of the disposal alternatives.” The arguments that follow to detail why T-117 is not a viable site for treatment are enormously flawed, both in terms of lack of depth and detail, and in the inclusion of substantial erroneous information.

The discussion of effectiveness, implementability and cost provides virtually no documentation, data or references to support the statements and conclusions presented. For example, the discussion of effectiveness states that soil washing is less effective at removing contaminants from fine soils particles (page 56, Effectiveness). While DRCC agrees that the inter- and sub-tidal sediments at the site are likely comprised largely of fine particles, this data is not included in the EE/CA. The EE/CA fails to mention, however, that much of the material from the site that can most benefit from treatment – the high level contaminants in the bank soils – may not be limited by the presence of significant fines. In fact, part of the EE/CA discussion focuses on the need to “screen” out coarser materials in the bank portion of the site to prepare it for treatment. In addition to providing no documentation on particle size, the argument is wrong in its suggestion that the BioGenesis’ process is ineffective on fine sediments; the process simply requires repeated cycles with finer sediments and while this can affect cost, it does not detract from the process’ technical feasibility. There is also absolutely no comparison offered between the sediment size and chemistry at the NY/NJ Harbor site, where the BioGenesis process was successfully bench and pilot tested and determined feasible, and the T-117



site. BioGenesis' soil washing/treatment technology is scheduled for full scale implementation in the NY/NJ Harbor beginning next month.

The EE/CA also mentions "institutional barriers to disposal of treated materials within the aquatic environment." While DRCC does not disagree that there may be barriers, a more detailed and open discussion of these barriers must be provided. It is not sufficient to simply state that they exist, with no basis upon which to evaluate the statement.

The section on implementability (pp 56–58) ignores the extensive pilot and bench testing already done at the NY/NJ Harbor site. If there are adequate similarities in the material to be treated, the entire discussion of treatability testing is moot. Further, the time the EE/CA states would be required for such testing (~9 months) is within the anticipated timeline already expected for this project (~12 months). It should also be acknowledged that several parties, including the Port itself, is questioning the proposed schedule for the T-117 project due to a number of issues including adequacy of the Draft EE/CA and availability of funding. To dismiss treatment on the basis of a schedule that may not be met anyway is misleading and inappropriate.

The EE/CA states that there are no treatment facilities in the vicinity, but the BioGenesis facility is a mobile unit that would be set up on site. The document then states that the amount of land needed is greater than that available at T-117. This statement is provided with no detail, and is simply incorrect. According to BioGenesis, the T-117 site has more than enough land available (5.5 acres) for the BioGenesis treatment unit (2 acres). In fact, assuming that T-117 and Slip 4 remain on the same cleanup schedule, a BioGenesis treatment unit on the T-117 site could be used to treat sediments from Slip 4 as well, helping to reduce the overall costs to the project.

As stated above, the discussion of treatability testing (pp. 57–58) ignores the fact that the testing described has already been conducted at the NY/NJ Harbor site. As stated, EPA has invested significant funding in bench and pilot testing the BioGenesis process in NY/NJ Harbor. The tests were successful. Full scale implementation is scheduled to begin there next month. Once technologies have been "established," they are not re-tested and re-tested at each potential treatment site. Site conditions are evaluated, compared to the treatment technologies being considered, and appropriate treatment is applied if feasible. Any rejection of BioGenesis as a treatment technology for T-117 on technical grounds must be based on the documentation already available, not by reinventing the wheel with new bench- and pilot-level tests. No data has been presented on why the BioGenesis process would not be feasible for T-117 sediments. All reviews conducted to date, including the Draft EPA CTM and Dr. deFur's T-117 site-specific review and report, suggest BioGenesis' treatment process is applicable to Duwamish River and/or T-117 sediments.

Finally, the discussion of cost (58) is completely inadequate. No cost estimates are provided. The cost "analysis" assumes that bench- and pilot-testing costs would have to be included, which is incorrect, as discussed above, and does not consider that other Duwamish River sites undergoing cleanup at the same time could provide more volume



and offset the costs specific to the T-117 project. At a bare minimum, the cost analysis should document what treatment would, in fact, cost. Then it would be possible to engage in a discussion of whether the costs presented are reasonable or cost-“effective.” Cost benefits should be included along with expenses. For example, treating highly-contaminated bank material could reduce current TOXCA-level wastes (> 50 ppm) to levels permitted for regional landfills, which is significantly cheaper. Even at the level of an Early Action EE/CA, this level of analysis is basic and essential.

### **8. Consideration of alternatives is artificially restricted**

The EE/CA discusses removal action options for the upland/bank, mudflat and submerged zones in Section 5. One upland, three mudflat and three submerged zone options are carried forward for consideration. Yet, only two alternatives (combinations of options) are presented. A more detailed discussion of why the other seven alternatives were dismissed is needed. In addition, an alternative that removes all PCBs above 12 mg/kg-OC in the river sediments should be evaluated.

More significantly, the statement repeated throughout the discussion of removal action options that no action may “undermine the existing pavement cap” is false. While there may be valid concerns about disturbing the actual “cap” over the 1999 cleanup area, these have not yet been adequately discussed. Presumably, contamination levels in the previously remediated zone (under the cap) are lower than in the adjacent bank, and so long as the cap is restored, there is a valid argument that removing high level PCBs that may have been left behind following the previous cleanup is more important than not disturbing the cap during removal activities. Regardless, there is absolutely no reason why the northern property parking lot cannot be disturbed in the areas where it does not serve as a remedial cap. In the northern portion of the site, high level PCBs exist immediately at and adjacent to and under the proposed removal area. The EE/CA proposes to limit the removal to the edge of the pavement, and along a 2:1 slope. This is completely inadequate. All high-level PCBs need to be identified (characterized) and removed as part of the cleanup. The removal action options and alternatives considered need to be amended to reflect the fact that the existing pavement is not an absolute site limitation, as erroneously described. At least one alternative that includes full removal of PCBs in the bank and at depth needs to be included for consideration in the final EE/CA. It should also be noted that characterization and removal of PCBs in the bank is necessary for adequate cap design and integrity (see above).

### **9. Critical decisions have been removed from public review**

The absence of critical elements of the cleanup plan and action that are of great concern and interest to the public is not acceptable. The EE/CA needs to provide information on the complete project boundary; cleanup technology; transportation, safety, project and long term monitoring, and BMP plans. Despite discussions with EPA, Ecology, the City and Port of Seattle about “informal” community review and involvement in post-EE/CA documents and decisions, this solution provides access to the community as a courtesy, rather than as a right, and does not adequately protect the community’s right to fully participate in decisions that will directly impact their health and environment. The EE/CA need to be complete and provide all relevant information to the public for review.



## Specific Comments

### Section 2.1.4:

The present uses of the waterway include tribal fishing that is carried out at least seasonally on the lower parts of the river. This section also makes little to no mention of any one of several small parks, including several in or close to South Park.

### Section 2.3.2.2 – benthic invertebrates:

The text needs more support before concluding that the benthic fauna is likely to be more like that of the turning basin than that of Kellogg Island solely on the basis of a highly generalized salinity difference. It is true that low salinity benthic habitats have fewer species, but there is a specific salinity at which the species diversity declines. The text of the EE/CA must give some indication of the salinity at T-117 and the salinity below which species decline.

The report documents the presence of a number of clam species and several crabs—tissue analyses will be reported in April 2005. These data on clams and crabs are not yet available and cannot yet be incorporated into the EE/CA. It is not clear what difference these data will mean for the EE/CA. The report should be quite clear as to how the clam and crab data will be used. If the data come back with higher PCB and metals levels than expected, will the plan then change to remove all of the contaminated sediments and upland soils?

### Section 2.3.2.3 – Fish:

The report summarizes the results of fish surveys – 19 species found at T-117. Tissue samples were collected and results are expected in April 2005. As above, how will these data results be used or influence the EE/CA?

### Section 2.3.2.4 – Wildlife: Mammals and birds:

87 species of birds and 6 of mammals are identified in the report, including river otter, muskrats, raccoons, seals, sea lion, harbor porpoise. The marine and other aquatic mammals are incredibly sensitive to PCB's, owing in large part to the biological differences among animals. The Mustelidae are the most sensitive mammals and no doubt their high metabolism and lability of the thermogenerative capacity is part of their sensitivity.

### Section 2.3.2.5 – Threatened and endangered species:

Six species are listed in table 2.1: four fish, bald eagle and peregrine falcon. Are there any state-listed species that should be included?

### Section 2.4.2 – Historical sampling:

The sampling efforts describe PCB sampling, but little sampling for TBT. TBT is a potent developmental and neurotoxicant and is a known endocrine disruptor, especially in marine invertebrates. Either existing results should be included, or there has been



insufficient sampling for TBT and the EE/CA should obtain more information on TBT and total organotin.

Table 2.2:

The results support the position that the contamination levels are high and sufficiently widespread that the sampling has not adequately identified the upland boundary of the contamination. The area near the marina is the most contaminated and should not be left in place.

Fig 2-8:

The figure shows incredibly high PCB levels, some increasing with depth, others decreasing with depth. PCB levels are higher in the northern areas, near the marina and toward the uplands, indicating again that the boundary has not been accurately identified.

Section 2.4.3.3 – Upland sources:

The EE/CA reports on soil samples in and around the catch basins. There were consistent occurrences of PCBs around the catch basins but the patterns are not as simple as in the subtidal sediments. The appropriate boundary is not yet clear in these areas.

The groundwater samples show little or no contamination, but the analysis and conclusions in the EE/CA are misguided. In addition to the fact that PCBs do not readily dissolve in water, the number and placement of sampling wells is inadequate to make this determination. In addition, NAPL sampling at the site has still been insufficient, and results showing suspended fines contaminated with PCBs in seeps has been ignored on the assumption that the fines were entrained at the point of sampling and not farther inland. This assumption has never been substantiated, despite repeated requests by DRCC. DRCC agrees that additional seep sampling should be conducted, as stated at the bottom of page 29.

Table 2-12:

The PCBs levels of 330-660 ppb found in roadway soil samples indicate that the contamination is ubiquitous at and around the site. EPA must consider the probability that there are multiple, possibly ongoing sources, including Basin Oil and buried drums along the shoreline.

Section 2.4.4.3 – Basin Oil site sample:

Sampling at Basin Oil needs to be repeated and additional investigation conducted.

Section 2.5 – Streamlined Risk Assessment:

The streamlined risk assessment is cursory, at best. DRCC's consultants note: "We have never seen [a risk assessment] so abbreviated – this is really a skeleton if I have ever seen one." Even for the level of risk assessment required for an Early Action EE/CA, the effort is insufficient.

Section 2.5.1 – Exposure pathways:



Par 2: No mention is made of exposure pathways for humans; please add “and humans” to the 2<sup>nd</sup> sentence.

Section 2.5.2.4 – Summary and conclusions:

DRCC concurs that PCB contamination at the site poses a risk to humans and ecological receptors.

Section 2.6.1 – Upland source control/pathways of concern:

The EE/CA states that: “..site investigation results have demonstrated that groundwater discharge and seeps are not generally pathways of significant concern for release of PCBs to the LDW.” DRCC disagrees with this statement. There has not been adequate data collected and presented to draw this conclusion. Indeed, some of the existing data has been disregarded without adequate justification.

Section 2.6.2 – Upland source control:

The LDWSCWG T-117 Action Plan is not yet available. It is not possible to evaluate the source control component of the EE/CA without more information. With the exception of the City’s notable efforts on the Dallas Ave street cleanup, little to nothing has been reported to control or even identify other possible upland sources thus far.

Section 2.6.2.1 – T117 upland area:

The EE/CA states: “In general, soil upgradient of the removal area containing PCB in concentrations greater than the CSL has been removed or capped to prevent contact and erosion by stormwater runoff.” While the soils have been “capped,” there are other potential exposure and contamination routes to the river. Much of the area outside of the 1999 cleanup has not been characterized and there is evidence that soil beneath the paved area may be highly contaminated, as well as some evidence that it may be being transported to the river via seep water; the question of NAPL transport is still unresolved.

Section 2.6.2.3 – Basin Oil facility:

The description of the soil clean up at the Basin Oil facility is hardly reassuring. The description is admittedly incomplete and ends with the caveat that source control measures will need to be determined and implemented. EPA and Ecology need to insist on more definitive action by the owners and assure neighboring residents that PCB contamination on-site will be cleaned up expeditiously and effectively.

Page 40 – Stormwater:

This section is hardly more reassuring than the previous one describing soils at Basin Oil. A cleanup order for Basin Oil should be issued as quickly as possible.

Section 4.0 – Removal Technologies:

DRCC supports the use of land-based removal techniques to the greatest extent possible. This strategy will lessen the risks of aquatic pollution if appropriate BMPs and safeguards are used.

Section 4.2 – Waterway-based Removal Action:



Water-based dredging will increase the re-suspension of contaminated sediments during removal. Use of a mechanical dredge will likely exacerbate resuspension, given the site conditions of the subtidal areas of the T-117 site. The plan should be revisited to consider alternatives to the use of bucket dredges, such as the use of hand-held hydraulic dredges. These have been used elsewhere successfully on the river, without the limitations argued by the EE/CA. In addition, there may be significant cost savings, as this method can be used to transport removed sediments to upland dewatering tanks, eliminating the need to barge a relatively low volume of contaminated sediments.

#### Section 4.3.3 – Treatment technologies:

DRCC has provided detailed comments on the sediment treatment issue in General Comments #7, above.

The treatment technologies section errs in claiming there is no space for an upland treatment unit; there is space at the T-117 site and at a number of other facilities on the Lower Duwamish.

The EE/CA over-emphasizes all of the drawbacks and difficulties and discusses none of the advantages and benefits of the potential treatment technologies. The EE/CA also fails to mention the complete absence of data on long term function and reliability of landfills. The PCBs will likely remain intact long after the landfill has failed.

In addition, the EE/CA states on page 58: Cost: “Experience has shown that mobilization and setup of a project-specific treatment facility entails significant initial cost.” This statement requires documentation. As it is now written, the implication of the EE/CA is that EPA project managers are deciding on the cost feasibility of treatment on the basis of their own personal information or experience, rather than on the basis of verifiable cost data presented, such as specification and bid sheets from sediment treatment vendors. EPA needs to provide documentation with the EE/CA.

DRCC thanks EPA and Ecology for the opportunity to review and comment on the Draft T-117 EE/CA. We look forward to your response and to working together on the next steps for developing an Early Action cleanup plan that the community can accept and support.

Sincerely,

*BJ Cummings*

BJ Cummings  
Coordinator  
Duwamish River Cleanup Coalition

