



May 27, 2010  
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Re: WPPA Comments on Proposed MTCA-SMS Rule Revisions

Dear Ecology:

The Washington Public Ports Association (WPPA) appreciates the opportunity to provide comments on proposed revisions to Model Toxics Control Act (MTCA) regulations regarding Method A adjustments, toxicity values, early-life stage exposure assumptions, and lead cleanup levels, and proposed revisions to the Sediment Management Standards (SMS) regulations regarding human health and background issues. Building on our participation in the MTCA/SMS Advisory Group and the Sediment Workgroup, we provide the following comments for your consideration.

## **1. Method A Adjustments**

Ecology has proposed substantial adjustments to many of the MTCA Method A cleanup levels for soil and groundwater. These cleanup levels are widely used at a majority of the thousands of cleanup sites managed by the cleanup program, especially smaller sites, including voluntary cleanup program (VCP) and underground storage tank (UST) sites. While not formally recognized at complex sites, the cleanup levels also play an important role in clarifying agency and PLP expectations and identifying background or detection limit issues. Changes in these cleanup levels should only be performed where the underlying change is significant and is well supported by the scientific literature.

Ecology has conducted an extensive analysis of where potential changes may be warranted to Method A cleanup levels. We concur with Ecology that no changes are warranted for the following compounds:

- Arsenic
- Benzene
- Cadmium
- Chromium III
- DDT
- EDC
- Gross alpha activity
- Gross beta activity
- Lindane
- Methylene chloride
- Mercury
- MTBE
- PCB Mixtures
- Total Petroleum Hydrocarbons
- Radium
- 1,1,1 TCA
- Xylene

Ecology has proposed adjustment to the EDB cleanup levels based on changes in underlying toxicity values. These changes are appropriate.

Several cleanup levels (chromium-VI, ethylbenzene, and naphthalene) are being considered for modification, but these changes would be appropriate only if the source of toxicity values used to develop cleanup levels is significantly expanded beyond that currently defined in MTCA regulations. As noted in our comments below, changes to existing MTCA regulations regarding the selection of toxicity values are not warranted at this time, especially as Ecology has the authority to use information sources other than IRIS, HEAST and the National Center for Environmental Assessment (NCEA) where there is clear and convincing evidence that use of an alternate value is appropriate. The proposed changes to the cleanup levels for chromium-VI, ethylbenzene, and naphthalene are not warranted at this time, as the toxicity values being considered by Ecology are not published in IRIS, HEAST or NCEA guidance, and Ecology has not demonstrated a clear and convincing need to use alternate values. Therefore, revisions to these Method A values should not be pursued during the current rule making.

Ecology has proposed updating the Method A cleanup levels for benzo(a)pyrene in groundwater and unrestricted soils based on potential future updates to the CLARC database procedures. The

impacts of the potential CLARC database updates vary for soils and groundwater, as the Method A cleanup levels appropriately consider multiple other factors in addition to the CLARC database outputs, including MCLs, PQLs and background concentrations.

- For groundwater, the current Method A cleanup levels are based on the MCL which has not changed. The MCLs are specified under 40 CFR 141.61 and WAC 246-290 and their use under MTCA is performed consistent with the requirements of WAC 173-340-720(3)(b), incorporating the adjustment to a 1-in-100,000 risk level as required under WAC 173-340-720(7)(b). Given that the MCL for benzo(a)pyrene has not changed, it is unnecessary to update the Method A groundwater cleanup level at this time. The current Method A cleanup level would remain compliant with MTCA requirements even if changes to the CLARC database procedures are implemented as proposed by Ecology.
- For unrestricted soils, the Method A cleanup levels are based on direct contact, and updates to CLARC database procedures could significantly affect the basis for the current cleanup level. However, Ecology has acknowledged in its March 2010 discussion materials that adjusting the Method A unrestricted soil cleanup level based on the potential CLARC updates would push the cleanup level below typical background concentrations in most urban soils and below many rural or agricultural soils (see Tables 5 and 11 in the March 2010 discussion materials). Ecology has not yet provided guidance regarding natural background benzo(a)pyrene concentrations in Washington soils, or whether the proposed updates would comply with MTCA's limitation on setting cleanup levels below natural background concentrations.
- For industrial soils, no changes to the CLARC database procedures or the Method A cleanup levels are anticipated, as the same early life exposures driving review of the groundwater and unrestricted soil cleanup levels does not apply to industrial land use exposure scenarios.

Based on the information above, Ecology will need to further consider the role of the MCL and background concentrations prior to updating the Method A cleanup levels for groundwater and unrestricted soils, respectively. Additionally, the implementability challenges for Ecology and the economic impacts to the regulated community of establishing an unrestricted Method A soil

cleanup level below typical urban soil concentrations will need to be addressed in a thoughtful and transparent manner in the rule making process.

Changes to the cleanup levels for TCE and PCE in groundwater have been proposed based on anticipated changes to EPA published toxicity data. However, the outcome of these changes is not clear, and changes to the cleanup levels appear to be premature. In the case of PCE, a change was also recommended based on exceedance of Ecology's groundwater screening level for vapor intrusion. However, this should not be considered significant justification to update the cleanup level. No changes to TCE or PCE cleanup levels for soil should be considered until the underlying question of updated toxicity values has been resolved. This can be accommodated in subsequent rule revisions if appropriate.

Ecology is considering potential changes to the Method A groundwater cleanup level for vinyl chloride (currently 0.2 ug/L). Method A cleanup levels appropriately consider multiple factors, including MCLs, PQLs, CLARC database outputs and other factors. Currently, the controlling factor for the vinyl chloride cleanup level is the drinking water MCL. The MCLs are specified under 40 CFR 141.61 and WAC 246-290 and their use under MTCA is performed consistent with the requirements of WAC 173-340-720(3)(b), incorporating the adjustment to a 1-in-100,000 risk level as required under WAC 173-340-720(7)(b). Given that the MCL for vinyl chloride has not changed, it is unnecessary to update the Method A groundwater cleanup level at this time, even if there are changes to the Method B CLARC database procedures for this compound. The current Method A cleanup level would remain compliant with MTCA requirements even with those other changes. The current groundwater cleanup level is also more protective than the current Ecology groundwater screening level for vapor intrusion, and complies with the published SW 846 vinyl chloride PQL (currently 0.2 ug/L for EPA Method 8260). Assuming that the Method A cleanup level for groundwater remains based on the MCL, no corresponding changes are warranted for unrestricted or industrial soil (as these cleanup levels are based on protection of groundwater).

#### Observations and Recommendations:

- Adopt Ecology's recommendations to preserve the existing Method A cleanup levels for arsenic, benzene, cadmium, chromium-III, DDT, EDC, gross alpha activity, gross beta

activity, lindane, methylene chloride, mercury, MTBE, PCB Mixtures, total petroleum hydrocarbons, radium, 1,1,1-TCA and xylenes.

- Adjust the EDB cleanup level as proposed by Ecology.
- Do not change cleanup levels for chromium-VI, ethylbenzene, or naphthalene at this time as the underlying toxicity information that forms the basis for these changes does not comply with existing MTCA data requirements.
- See Section 4 (below) for recommendations regarding lead cleanup levels.
- The anticipated changes to the CLARC cleanup level calculation methods may not justify changes to the Method A groundwater cleanup level for benzo(a)pyrene at this time, as the MCL has not changed and the current cleanup level would remain compliant under MTCA requirements; prior to implementing any decreases to the cleanup level for unrestricted soils, Ecology should further articulate how the updated cleanup level would compare to natural background soil concentrations; soil cleanup levels for industrial properties should remain unchanged; Ecology will need to further consider and articulate rule implementability issues and economic impacts associated with any proposed reduction in the unrestricted soil cleanup level.
- Do not change the TCE or PCE cleanup levels at this time for groundwater or soil as the uncertainty regarding the underlying toxicity data has not been resolved. Changes in these cleanup levels can be reviewed as part of subsequent rule making efforts.
- The anticipated changes to CLARC cleanup level calculation methods may not justify changes to the Method A groundwater cleanup level for vinyl chloride because the basis for the current cleanup level (the MCL as adjusted to a 1-in-100,000 risk level consistent with existing MTCA procedures) has not changed and the current cleanup level would remain compliant with MTCA requirements. Assuming that the Method A cleanup level for groundwater remains based on the MCL, no corresponding changes are warranted for unrestricted or industrial soil (as these cleanup levels are based on protection of groundwater).

## 2. Toxicity Values

The MTCA rule provides for updates to toxicity data for human health and applies a hierarchy of toxicological information that should be used for establishing cleanup levels (WAC 173-340). The

key points from discussions between Ecology and the MTCA/SMS Advisory Group and Science Panel along with the proposed revisions to the hierarchy that are under consolidation were provided by Ecology in the April 26 MTCA Risk Issue Summary. The proposed updates include keeping the IRIS database, which is updated through an external peer-review process, as the primary basis for developing cleanup levels, and removing reference to the HEAST database as a data source. Ecology is also considering a process where updated toxicity data would be reviewed and updated in the CLARC database annually. This type of process may consider the use of Regional Screening Tables (RST) from EPA regions. The RSTs typically are only internally reviewed and the Science Panel noted that their use by Ecology may be acceptable if a process for external review was added to the update process.

Observations and Recommendations:

- EPA's IRIS database has been recognized as the "gold standard" for toxicological data due to its rigorous external peer review process for data inclusion. Ecology should continue to rely on IRIS as the primary source of data for cleanup level development.
- The use of RSTs is discouraged because of the lack of standardization. As noted by the Science Panel, the use of RSTs would require Ecology to develop a process of external peer-review prior to MTCA use. Such a process would use State resources to duplicate EPA's efforts to update IRIS and is therefore not recommended.

### **3. Early-life Stage Exposure Assumptions**

The evaluation of early life stage exposures and their impacts on risk assessment protocols for carcinogens is a growing area of research, and it is appropriate for Ecology to evaluate when and how MTCA risk assessment protocols and CLARC database procedures should be aligned with evolving scientific information in this area. Application of new procedures where the data are well developed appears appropriate. However, the data in this area are evolving rapidly, and the strength of the information should be weighed as part of Ecology policy decisions and the rule making effort.

EPA conducted an exhaustive review of the status of the science underlying the early life exposures as part of the agency's March 2005 *Supplemental Guidance for Assessing Susceptibility*

*from Early Life Exposure to Carcinogens.* Some, but not all of these issues are discussed in the Ecology issue paper and discussion materials prepared for the MTCA/SMS Advisory Group. Issues that warrant additional discussion and consideration as part of the rule making include the following:

- **Rapid Pace of Research:** The evaluation of early life exposures and related topics (e.g., research regarding endocrine disrupting compounds) is a high EPA priority and the pace of ongoing research is rapid. This is both beneficial and cautionary, in that substantial new information will be available in the near future on which to base updated science and policy decisions.
- **Ongoing Development of Animal Models:** EPA notes that the available experimental data include a wide range of exposure scenarios due in part to the lack of a defined protocol for early life testing. EPA identified a need to refine the testing protocols to ensure data quality for early life stage research. This refinement will likely improve the information on which policy decisions can be developed.
- **Conclusive Findings Currently for A Small Number of Compounds:** EPA found that conclusive data were available only for a handful of compounds. The strongest data and the best theoretical basis for increased early life exposure susceptibility was for mutagens (carcinogens that work by damaging DNA directly). EPA stated that “the information on lifestage susceptibility for chemicals inducing cancers through modes of action other than direct DNA interaction is more varied,” with increased risks in some cases, but not in others, and some compounds (e.g., ethylene thiourea) producing cancers only after adult exposures (no cancers were observed during early life exposures).
- **EPA Caution Against Use of General Defaults, Particularly for Non Mutagens:** In the March 2005 guidance, EPA states that “The Agency considered both the advantages and disadvantages of extending the recommended, age dependent adjustment factors for carcinogenic potency to carcinogenic agents for which the mode of action remains unknown. EPA recommends these factors only for carcinogens acting through a mutagenic mode of action based on a combination of analysis of available data and long standing science policy positions that set out the Agency’s overall approach to carcinogen risk

assessment, e.g., the use of a linear, no threshold extrapolation procedure in the absence of data in order to be health protective.”

In its discussion materials prepared for the MTCA/SMS Advisory Group, Ecology asked for feedback as to whether early life stage adjustments should be applied, and whether they should be applied to all carcinogens or only a subset of compounds. EPA’s guidance on this topic is clear, recommending use of the early life stage adjustments only for compounds with a known mutagenic mode of action.

If Ecology chooses to extrapolate beyond the existing scientific data, and to apply the early life stage adjustments beyond the clearly stated recommendations contained in the existing EPA guidance, then it will be important for Ecology to more clearly articulate that the agency is making these policy choices. The uncertainties associated with this extrapolation beyond the existing research pending the availability of new research in this area should be clearly discussed so that they may be considered by the public during review of the rule making effort.

Given the rapid pace of research in this area, it may be more prudent to update the MTCA protocols in steps, matching the rule updates to the status of the scientific research. Under this approach, the early life stage adjustments might be applied to a subset of carcinogens as part of the current rule making, with additional updates as part of subsequent 5 year reviews.

Observations and Recommendations:

- Consider applying age-dependent adjustments in the current rule making to carcinogens with a known mutagenic mode of action, consistent with current EPA guidance on early life exposures.
- MTCA revisions are an ongoing process and there will be future opportunities to update cancer slope factors based on forthcoming research on the mutagenic mode of action of other chemicals; expansion of the use of early life stage adjustments could be conducted as part of the next 5 year review when additional scientific data are available in this rapidly evolving area of research.

- If Ecology elects to extrapolate beyond the existing research and to apply the generic defaults more broadly than recommended by EPA (e.g., applying them to all carcinogens) then the uncertainties of this approach should be clearly articulated in the rule making materials, along with Ecology's rationale for why this policy choice is elected now rather than matching the pace of the rule updates with the scientific literature and EPA recommendations.

#### **4. Lead Cleanup Levels**

Ecology is considering potential changes to the Method A cleanup level for lead in unrestricted soils to increase protectiveness against potential child lead exposures. Some changes to the unrestricted soil cleanup level may be appropriate; however, no changes are warranted at this time for industrial soils (which are not subject to child exposures) or groundwater (this cleanup level is based on the MCL which has not changed).

In general, Ecology's use of the IEUBK model in the "soil only" exposure mode is appropriate for evaluating the potential health risks posed by elevated average soil contaminant concentrations. The use of the model in "soil only" model is appropriate given the context of MTCA cleanup decisions. In contrast, the use of the model in the "integrated exposure" mode is not relevant to the question being asked, and should not be used as the basis for cleanup level adjustments

Ecology's analysis using the IEUBK model in soil-only exposure mode (Table 3.3 of the March 2010 Discussion Materials Prepared for the MTCA/SMS Advisory Group), appears appropriate. But two significant issues should be considered as part of the rule making effort prior to selecting an updated Method A soil cleanup level. The first of these is how to link the model inputs/outputs to the MTCA requirements for risk reduction. The second of these is how to address the differences between how the model considers soil contaminant concentrations, and how cleanup levels are applied under MTCA. These two issues are discussed further below.

With respect to the MTCA risk reduction requirements, the IEUBK model does not provide direct linkages to MTCA hazard index requirements or other MTCA policies. On page 18 of the March

2010 discussion materials prepared by Ecology for the MTCA/SMS Advisory Group, Ecology articulated three different combinations of technical and policy choices that it believes would be compliant with the policies underlying the MTCA rule. These included ranges of the two model inputs/outputs for average soil concentrations, blood lead levels and the percentage of the population that would be predicted to exceed the target levels. We concur that these ranges are consistent with the policies underlying the MTCA rule and would be appropriate for consideration in rule making. Given that all three combinations are consistent with MTCA, other factors would need to be considered to select among the combinations.

In selecting a target cleanup level using the IEUBK model, it is important to consider the different ways in which concentrations are applied under the IEUBK model and during a MTCA compliance evaluation. That is, the IEUBK concentration inputs are not the same as a MTCA cleanup level. The IEUBK model assesses *average* exposure conditions. In contrast, MTCA compliance evaluation procedures are often applied within small portions of a site (e.g., cleanup of a ½ acre area release containing heavy metals contamination, within a larger 2 acre property) rather than across the whole area of exposure. Second, MTCA statistical requirements include two tests that go well beyond the estimation of true average soil concentrations. In addition to using the 95% upper confidence limit of the mean, MTCA requires demonstration that fewer than 10 percent of the samples exceed the cleanup level, and that no individual samples exceed the cleanup level by more than a factor of two. This typically means that true average contaminant concentration at a cleanup site usually must be pushed well below the specified cleanup level to be MTCA compliant. Achieving compliance with a 150 mg/kg cleanup level, for example, could require average concentrations within the site to be reduced below 100 mg/kg. Ecology has not discussed this potential difference in any of the existing discussion materials presented to the MTCA/SMS advisory group or in the other rule making literature.

In identifying a target soil cleanup level, Ecology will need to seriously consider existing background lead concentrations, both within urban and rural areas. As cleanup levels for lead are pushed below 250 mg/kg and closer to natural background concentrations, the area and volume of affected soils will increase exponentially. This is evident in Ecology's data analysis (see Table 3.5 of the March 2010 discussion materials) which showed that the percentage of exceedances in the

State database doubled or tripled with each 50 mg/kg decrease in the threshold lead concentration. Additionally, the EPA studies cited in the discussion materials indicate that soils within 50 yards of roadways frequently exceed 200 mg/kg. This observation indicates that setting a target soil concentration in the range being considered by Ecology (100 to 150 mg/kg) could substantially increase the number of properties requiring management within the cleanup program (i.e., since many properties are within 50 yards of a roadway).

Ecology should expand its characterization of background lead concentrations, particularly in urban and former agricultural areas, and incorporate these data into its economic impact analysis as part of the rule making process. Without considering this information, the economic impact of proposed changes to the cleanup level and the difficulties of administering the new cleanup level at sites across the state could be substantially underestimated. Ecology's economic analysis of properties affected by combined arsenic and lead contamination should not be assumed to apply to other types of sites containing lead contamination in the absence of arsenic.

Observations and Recommendations:

- Use the soil only exposure analysis (not the integrated risk analysis) in evaluating soil cleanup levels with the IEUBK model or other similar lead exposure models.
- Consider other factors when selecting a final cleanup level from the range of policy combinations identified by Ecology as compliant with the policies underlying the MTCA rule (see page 18 of March 2010 discussion materials)
- In selecting a final cleanup level for lead in soil, such other factors should include the differences between IEUBK average modeled soil concentrations and the more stringent MTCA compliance monitoring requirements that further reduce average soil concentrations at MTCA cleanup sites; acknowledge that there are differences between an exposure evaluation conducted using the IEUBK model compared to the more stringent requirements of a compliance evaluation under MTCA which provides additional statistical controls on mean and maximum concentrations.
- Expand analysis and characterization of background soil lead concentrations (including typical regional background concentrations in urban and rural areas) and provide this analysis in the rule making documentation. Avoid setting a lead cleanup standard below

urban background concentrations, as such a standard would be impracticable to meet in the context of standard MTCA cleanup actions.

- Analyze and present the economic impacts associated with the proposed change in lead cleanup level, e.g. a change from 250 mg/kg to 150 mg/kg would substantially increase the area and volume of impacted soils and the associated costs of cleanup.
- Acknowledge that decreasing the lead cleanup level to a level approaching urban background concentrations will likely decrease the number of “complete” cleanups and increase the proportion of sites that will have to rely on containment and institutional controls.
- No change is warranted for the Method A cleanup level for lead at industrial sites.

## 5. Fish Consumption Rates

Ecology has proposed substantial changes to the fish consumption rates used in the development of MTCA cleanup levels for surface water. The stated goal is to update exposure assumptions to protect potential high consumption seafood consumers. Four options have been discussed:

- An updated narrative standard
- Guidance materials
- Criteria for site specific determinations
- Default fish consumption rates and modifying factors

In its issue paper from July 2009, Ecology presented different gross estimates of fish consumption rates, without differentiating between types of seafood consumed. These published rates should be broken down to show the different types of seafood in question, because fish consumption rates tend to vary depending on both the specific consumer group (i.e., based on local tribal harvesting customs), the types of fish/shellfish, and the characteristics of the site and water body (e.g., availability of certain fish/shellfish). Typically, anadromous and pelagic fish such as salmon or tuna dominate fish consumption rates, such as in the Tulalip/Squaxin study performed by Toy et al. (1996) where the consumption of anadromous and pelagic fish represented over 60 percent of the total adult fish consumption. This is an important consideration because anadromous and pelagic fish tend to be virtually unaffected by localized water or sediment contamination due to their life cycle and feeding behaviors (these fish are typically excluded from site specific risk analysis under

CERCLA and MTCA, as with the exclusion of salmon and other anadromous fish from the final Lower Duwamish Waterway human health risk assessment). Other fish or shellfish that inhabit localized home range areas may be affected by site contamination to a greater degree, but typically make up a smaller portion of the total fish consumed. As a result, application of the total fish consumption rate to one or a few localized species will typically overestimate the exposure risks that are reasonably associated with a contaminated site. The site-specific characteristics of the water body must also be considered; for example, the potential exposure risks to seafood consumers at a small 1-acre freshwater pond with limited fisheries resources would be substantially different than a large marine intertidal area with harvestable shellfish beds and abundant fisheries resources.

Because the above factors can all be considered under current MTCA regulations using site-specific decision-making criteria, no regulatory changes are required to address the concerns raised by Ecology. Subsistence fishing exposure risks have been and are being considered at numerous contaminated sediment sites as part of MTCA/SMS cleanup decisions. Flexibility currently exists in the MTCA regulations to adjust exposure assumptions and develop more stringent cleanup levels for receiving waters where necessary to ensure protectiveness [WAC 173 340 708(10)(b)]. No regulatory changes are required to provide flexibility to consider use of higher consumption rates and appropriate site-specific diet fractions if warranted.

Observations and Recommendations:

- No rule changes are required to address protection of high consuming populations, as sufficient flexibility is already included in MTCA to address this concern.
- If Ecology's goal is to better clarify agency expectations and streamline cleanup decisions, this can be addressed with an updated narrative standard accompanied by development of appropriate regulatory guidance.
- If higher consumption rates are directly incorporated into the regulations, then sufficient detail will be required to clarify the different types of seafood associated with each consumption rate for a variety of potential receptor populations and site conditions, and site-specific adjustments of the consumption rates (both upward and downward) and diet fractions may be required.

## **6. SMS Human Health and Background Issues**

In many areas, sediment remediation is driven by human health risk associated with fish consumption due to bioaccumulative contaminants. For a number of bioaccumulative chemicals, conservative risk assessment scenarios result in sediment (or tissue) cleanup goals that are below background conditions in a particular bay or river reach. Background contamination may be caused by naturally occurring minerals as well as ubiquitous nonpoint sources of global and regional pollution. These situations provide special regulatory challenges regarding the definition of site background, source control goals and authorities, and limits of PLP liability. Our comments on these issues are provided below.

### ***6.1 Definition of Regional Background***

We understand Ecology is considering structuring the SMS to include implementable short-term goals to encourage site cleanup, as well as longer-term goals to continue to improve the health of the State's receiving waters in the decades to come. We agree with this type of approach, and specifically with the use of appropriately developed Regional Background levels as the cleanup goal under the SMS for sediment sites where human health risk-based standards are below background conditions.

Regional Background may be defined in several ways. It may be defined as a narrative standard inclusive of ubiquitous and diffuse regional sources which are societal in nature and beyond the control of a Site PLP, such as stormwater, combined sewer overflows, and atmospheric deposition. It may be defined numerically using environmental sampling data, for each particular bay or river reach, by excluding portions of the bay or river that are obviously impacted by known point sources or site-related contamination, and potentially augmented with focused fate and transport evaluations to assess the impacts of regional sources on sediments near a PLP's facility. It may also be defined on the basis of practicability, in consideration of the costs, benefits, and implementability of a potential cleanup action; this would help to separate extensive areas of low-level contamination that contribute minimally to regional risk and that would be ineffective to remediate. It should also be understood that Regional Background may not be a single concentration value for

an entire bay or river reach, and that gradients may exist, for example, nearshore to offshore gradients, and urban to rural gradients.

The focus of the SMS should be on remediating legacy contamination in sediments, thereby reducing the effects of in-water sources of recontamination and accelerating natural recovery of the regional bay or river system. Short-term cleanup goals will be facility-specific, and will need to be developed such that attainment of these goals is reasonably assured following completion of a well executed cleanup action. Regional Background is a reasonable and practical long-term goal for the application of SMS regulations. The Sediment Workgroup has acknowledged that attainment of Natural Background and improvement in Regional Background conditions may require decades of work, if attainment is even possible. MTCA-SMS is not an effective regulatory mechanism for dealing with broad, diffuse, and ubiquitous sources of ongoing pollution in our society, from such things as road runoff and atmospheric deposition, much of which is largely beyond the scope of our State and local governments and requires action at a national or even international level.

Observations and Recommendations:

- Define Regional Background as including ubiquitous and diffuse societal sources such as municipal stormwater, combined sewer overflows, and atmospheric deposition.
- Numeric definitions of Regional Background may be calculated for specific bays or river reaches, understanding that gradients may exist from nearshore to offshore, and urban to rural conditions. Numeric definitions may be useful for defining outer Site boundaries.
- Limit the scope of the SMS to legacy contamination above Regional Background levels.

**6.2 Source Control and Recontamination Issues**

The primary responsibility of the SMS should be to ensure that PLPs implement source controls at their facilities that will prevent recontamination of adjacent sediments and sites.

This should be a realistic and achievable goal that will allow Site cleanups to proceed. Other aspects of source control may require decades of work at the national and international level, let alone the state and local level. As discussed below, such long-term recontamination issues and source control strategies should not be the charge of the SMS.

Aspects of recontamination are implicit in the definitions of Natural Background and Regional Background, although these broad and diffuse sources are beyond the control of the PLP. For example, Natural Background includes low concentrations of persistent organic compounds such as PCBs which are distributed in the global atmosphere and deposited on our watersheds or directly onto our receiving waters (WAC 173-340-200). We agree with Workgroup panel members that Regional Background should include diffuse nonpoint sources in municipal stormwater, combined sewer overflows, and regional atmospheric deposition. Improvements in both Natural and Regional Background levels will require decades of diligent source control work at all levels of government, and ultimately the degree of success is uncertain. Implementation of source controls to achieve long-term goals, including progress toward Natural Background, are best managed under other federal and state programs and authorities.

Over and above Regional Background, there may also be localized sources from other uncontrolled cleanup sites or point sources. Therefore, depending on the sequencing and priorities of cleanup and source control actions in the region, it may not be possible in all situations for a PLP to remediate to Regional Background if the remedial action will be quickly recontaminated by adjacent sources. In these instances, Ecology should have the flexibility to assign cleanup levels based on the level of recontamination that is expected at the Site following remediation, as any further cleanup work would be compromised to this level. To encourage timely remediation, a cleanup level must have finality, even when elevated by the recontamination potential of the area, and a PLP should be protected from having to take future action if and when area background concentrations decrease as neighboring sites are eventually cleaned up.

Observations and Recommendations:

- The primary responsibility of the SMS should be the implementation of site-related source controls at sediment cleanup sites.
- Implementation of national, state, and regional source controls necessary to reduce Regional Background and make progress toward Natural Background are best managed under other federal and state programs and authorities.
- Ecology should retain the flexibility to assign cleanup levels above Regional Background based on the expected level of recontamination that is likely to occur from uncontrolled cleanup sites or point sources.

**6.3 *Providing Incentives for Sediment Cleanup***

To reduce impediments to cleanups and to further the progress of cleaning up our bays and rivers, the SMS must provide a process for clearly defining the limits of PLP responsibility in space and time. The PLP must be confident that taking action within these limits will be feasible and implementable.

Ecology should have the flexibility to spatially define sites or units within the regional bay or river system, even if contaminated sediments from multiple sites and sources are commingled. Defining discrete sites or units may take into consideration the chemical profile of the sediment contamination, hydrodynamics and sedimentation patterns, the environmental value and sensitivity of the area, and the practicability of conducting a remedial action. Without well-defined site boundaries, investigation and cleanup efforts are more likely to get stalled by litigation. As mentioned previously, the outer boundary of PLP liability should be limited to Regional Background, and in some cases values above Regional Background may be appropriate if recontamination from other sites and sources is expected.

To achieve future reductions in Regional and Natural Background levels will require decades of work at all levels of government and success is uncertain; it is unreasonable to impose such a prolonged and unpredictable future liability on PLPs. The SMS must provide the PLPs with an achievable target and means for final settlement of liability. In some

cases, this may be achievement of Regional Background at the PLP's cleanup Site. If it is clear that PLP releases have contributed to the broader regional contamination of a bay or river system, well beyond the margins of the Site, then the PLP may be required to contribute funds to a long-term monitoring account to allow Ecology or an equivalent State or local monitoring agency to track the progress of recovery in the region. This one-time contribution, appropriately discounted for future work, would constitute the PLP's final settlement for regional liability, in conjunction with the PLP's completion of more localized Site remediation.

Observations and Recommendations:

- To encourage sediment cleanup actions, site cleanup goals must be realistic and achievable, and PLP limits of responsibility clearly defined in space and time.
- Ecology should encourage definition of individual sites or units within a contaminated region based on the scientific weight of evidence, even if contaminants from multiple sources are commingled; this will incentivize implementation of discrete cleanup actions.
- PLPs should not be liable for decades-long monitoring of Regional and Natural Background conditions; to the extent they may have contributed to these regional conditions, they should be able to make a contribution to a future monitoring fund as a final settlement of their regional liability.

Thank you for your consideration.

Sincerely,



Patty Boyden  
Port of Vancouver  
Director of Environmental Services



Mike Stoner  
Port of Bellingham  
Director of Environmental Programs