**Addressing Bioaccumulative Adverse Effects to Biota When Setting Sediment Cleanup Standards**

**Preferred option summary**

**What is the preferred option?**

Develop a narrative in the section of the Sediment Management Standards that specifies procedures for setting sediment cleanup standards at cleanup sites to protect biota from bioaccumulative chemicals.

This option only covers protection of biota from bioaccumulative effects when setting cleanup levels at sediment cleanup sites. Most of the major issues (decision making framework, level of protection, procedures) are covered in detail in the issue paper, "Addressing Human Health Risks When Setting Sediment Cleanup Standards in the Sediment Management Standards (SMS) and Model Toxics Control Act (MTCA) Rule."

**Why is this the preferred option?**

The intent of rule revision was to harmonize MTCA and SMS to provide a more efficient, consistent cleanup process. MTCA has a process to determine cleanup standards to protect biota from bioaccumulative effects through conducting a Terrestrial Ecological Evaluation. A narrative standard would provide more consistency with the MTCA rule and help to clarify how to protect biota from bioaccumulative effects when setting cleanup standards.

Although human health generally drives the cleanup standard to background for most bioaccumulative compounds of concern, a narrative standard would address the protection of biota from bioaccumulative chemicals when risks to biota are greater than risks to human health. In addition, a narrative standard will provide a more predictive and consistent approach for both the agency and the potentially liable party.

The alternative options include:

- Continued use of the current approach where risks to biota are addressed through best professional judgment on a site specific basis.
    - Use of this option would require site managers to develop an assessment on a site specific basis. This would result in potential inconsistency and unpredictability for the PLP's.
- Promulgation of numeric or biological criteria.
    - It would be difficult to adopt numeric sediment criteria since the bioaccumulation of chemicals from sediments to tissue is influenced by site-specific conditions which can be highly variable.
    - Developing tissue criteria would require significant financial and staff resources. The Regional Sediment Evaluation Team's recently published a Sediment Evaluation Framework that provides an appendix of calculated target tissue concentrations that are protective of various ecological receptors. This work can provide a basis for guidance, but is not ready for development into promulgated criteria.

**What is the scope of the preferred option?**

The intent of rule revision was to harmonize MTCA and SMS to provide a more efficient, consistent cleanup process. The authorization from the director stated that the main purpose of this rule revision is to "Set clear policies and methods for sediment cleanup actions (for example, integrate the MTCA and SMS rule requirements for cleanup standards of bioaccumulative chemicals)."

Developing clear policies and methods for protection of biota from bioaccumulative chemicals is technically complex topic with numerous site-specific factors to consider when conducting an evaluation. This option would include a narrative standard for protection of biota, and provide guidance for when and how to evaluate risk to ecological receptors. To be able to complete this task in a timely manner, it is necessary to focus our efforts on just the cleanup section of the rule (WAC 173-204-570). To revise the other sections of the rule, such as the SQS and CSL criteria, Ecology would need to address a broader range of technical and policy issues. These issues are further discussed in the Background/Human Health Options paper.

**Disadvantages of this option**

Developing a narrative standard would not include numeric or biological criteria. If sufficient detail is not provided in a narrative standard, it could result in some inconsistency for setting cleanup standards that are protective of biota.

Developing a narrative standard in only the cleanup standards section would have several implications that are detailed in the Background/Human Health Option paper. Please refer to this paper for this specific discussion.

The long-term objective should be to revise all parts of the rule to provide a clear and consistent approach for protecting the environment from bioaccumulative chemicals. This is a critical step needed to control sources, clean up contamination and protect the people and biological resources that depend on the aquatic ecosystem. If we only address one part of the rule in this rule revision, we will still need to articulate the strategy for revising the Sediment Management Standards in the long term so that the regulation is aligned with its objective.

This option may increase the work load, especially in cases where sites are driven by Polycyclic Aromatic Hydrocarbons. Additional evaluations must be conducted to ensure compliance with existing federal and state laws.

**Where does it fit in the WAC?**

To be determined.