

Sediment Management Standards Rule Revisions

Introduction to the Issues

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SMS Rule Revisions

- 1. SMS/MTCA Integration:**
 - Cleanup Decision Framework**
 - Terms and Definitions**
- 2. Freshwater Standards**
- 3. Other Deleterious Substances**
- 4. Bioaccumulatives: Ecological Risk**
- 5. Bioaccumulatives: Human Health**
- 6. Background - ubiquitous chemicals**

SMS/MTCA Integration

How should Ecology harmonize the SMS and MTCA rules to provide:

- **Clear processes**
- **Consistent language**
- **Consistent decision framework for sediment cleanup**

SMS/MTCA Integration

Examples: Terms & Definitions

SMS

- **Cleanup Objective**
- **Cleanup Standard**
- **SQS**
- **MCUL**

MTCA

- **Cleanup Level**
- **Cleanup Standard**
- **Remediation Level**

SMS/MTCA Integration

Examples: Setting Site Specific Criteria

SMS

- **Two** phase structure for c/up levels:
 - Cleanup Screening Level
 - Sediment Quality Standard

MTCA

- **One** phase structure for c/up levels:
 - Protective of human health: 1 in a million

Example: Decision Making Process for Remedial Alternatives

SMS

- Combines alternative & c/up level by using:
 - Cost
 - Net Benefit
 - Feasibility

MTCA

- Determines site specific c/up level first
- Then considers:
 - Cost
 - Feasibility etc.
- Permanence

SMS/MTCA Integration Options:

Revise MTCA & SMS:

- **Focus on SMS revisions primarily**
 - **Terminology – adopt MTCA terms**
 - **Adopt permanent remedy/maximum extent practicable preference**
- **Clarify where and how MTCA defers to SMS**

Freshwater Standards Issue

How can the SMS be revised to provide sediment cleanup standards in fresh water environments?

Freshwater Standards Issue

- **Lack of freshwater chemical or biological criteria.**
- **Limited to a narrative standard.**
- **Limited to freshwater sediment quality values.**
- **Use of BPJ and BAS – site specific, no predictability for PLP.**

Freshwater Standards

Options: Revise SMS

- **Promulgate chemical criteria.**
- **Promulgate biological criteria.**
- **Promulgate both chemical and biological criteria.**
- **Clarify where in SMS chemical and biological criteria apply.**

Other Toxic, Radioactive, Biological or Deleterious Substances Issue

**How can Ecology best clarify the
regulatory connection between:**

- These provisions in the SMS and**
- The definition of “hazardous
substances” under MTCA**

Other ...Deleterious Substances Issue

- **MTCA defers to SMS for sediment cleanup.**
- **Biological criteria trumps chemistry in SMS.**
- **Confirmatory designation in SMS needs further clarification in MTCA.**



Vertical Profile



Plan View

Other ...Deleterious Substances

Options: Revise MTCA & SMS

- **Clarify MTCA hazardous substances definition**
- **Clarify SMS Other deleterious substances definition**

Bioaccumulatives: Ecological Risk Issue

How should we address bioaccumulative chemicals to:

- Provide clear and predictable clean up standards**
- Protect biological resources**

Bioaccumulatives: Ecological Risk Issue

- **SMS criteria promulgated to protect the benthic community.**
- **SMS numeric criteria do not include bioaccumulative exposure pathway.**
- **MTCA has a terrestrial ecological evaluation process.**

Bioaccumulatives: Ecological Risk

Options: Revise SMS

- Develop a narrative standard to address:
 - Ecological risk and exposure pathway
 - Provide structure to set cleanup levels
- Develop guidance

Human Health and Background Two Intertwined Issues

How should Ecology:

- Provide clear and predictable cleanup standards that protect human health?
- Consider contaminant *background* concentrations when setting cleanup standards?

Human Health Issue

- **Narrative standard “no significant human health threats”.**
- **Bioaccumulative exposure pathway unclear.**
- **2 tiered SMS model and cost/feasibility.**
- **MTCA is more specific for soil and water – natural background.**

Background Issue

- **SMS rule unclear how background levels are considered for cleanup standards.**
- **How to determine natural and area background levels.**
- **Risk-based sediment levels may be below background.**
- **Technical feasibility issues.**

Current approaches

MTCA

MTCA has a single cleanup level, but land-use restrictions or compliance points allow some flexibility.

Remediation Level or
Area Background
Interim Action

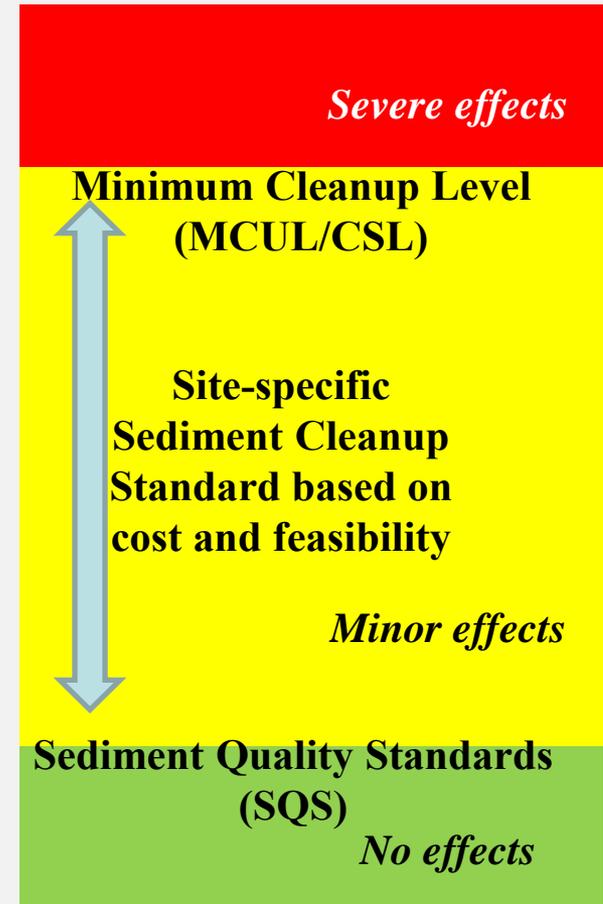
Method C Cleanup Level

Method A or B
Cleanup Level

*Human health risk of 10^{-6}
and Hazard Quotient =1,
or Natural Background
or Practical Quantitation Limit*

SMS

SMS uses a range for benthic toxicity. A site-specific cleanup standard is determined, allowing some minor effects.



Proposed Approach

- Agree on and document how you determine human health protection and background at sediment cleanup sites.
- Some parts will be guidance, links to references.
- Some parts rule revision.
 - Decision making framework
 - Level of protection
 - Background definition

Potential frameworks for human health

**Single cleanup
standard**

or

Range

**Human health
upper level**

**Site-specific
Sediment Cleanup Standard within
an allowable range.**

**Human health
lower level**

Sediment Cleanup Standard



Questions?
Comments?

