303(d) Sediment Listing Policy Focus

What are the issues/impacts of 2013 rule change on 303(d) sediment listings?

October 27, 2016

What are the goals for today?

- Discuss tribal issues/concerns.
- Provide a brief overview of the Sediment Management Standards framework.
- Describe the changes to the rule in 2013 (Part III, IV and V).
- Discuss the potential impacts of the changes to the SMS rule on the 303(d) listing process (Category 5 and 4b focus).
- Provide brief examples of the process for listing and delisting sediment grids.
- Discuss any other changes to the rule affecting the listing process.

Significant Tribal Issues/Concerns Ecology Heard

1. Listings that were based on Part V of the SMS rule should remain in Cat 5.

2. Cat 4b listings based upon Part V of the SMS should be moved back to Cat 5 because Part V is no longer a water quality standard and the new SMS rule offers no reassurance that cleanups will meet WQ standards.

3. Were fish consumption rates included in the SMS rule amendments?

Overview of Sediment Management Standards (SMS) framework

Overall purpose of the SMS.

Set standards for sediment quality (both numeric and narrative);

- Apply the standards to reduce pollutant discharges; and
- Provide a decision process for the cleanup of contaminated sediment sites.

There are 6 sections of the SMS:

Part I: General Information.

Part II: Definitions.

Part III: Sediment Quality Standards (SQS).

Part IV: Sediment Source Control.

Part V: Sediment Cleanup Standards.

Part VI: Sampling and Testing Plans/Recordkeeping.

Overview of Sediment Management Standards (SMS) framework

Two Major Parts to the Rule:

1) **WQ Standards**
2) **Cleanup Standards**

Different terms are used in each section of the NEW rule but are equivalent criteria.

Tier	***WQ terms***	***Cleanup terms***
Lower tier =	SQS (sediment quality standards)	= SCO (Sediment Cleanup Objective)
Upper tier =	SIZmax (Sediment Impact Zone maximum)	= CSL (Cleanup Screening Level)

New cleanup term
(does not affect WQ listings)

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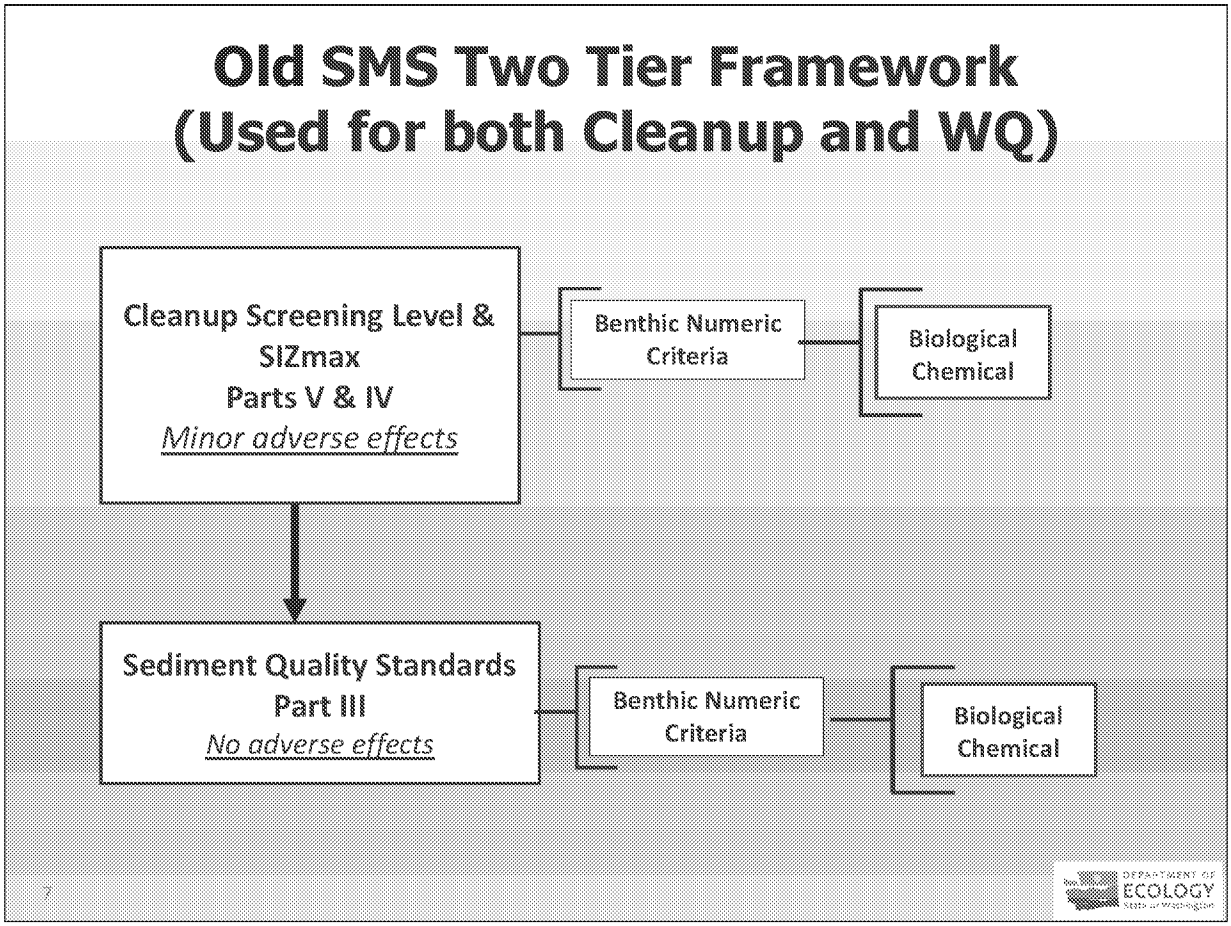
Overview of Sediment Management Standards (SMS) Framework

- Benthic protection was the basis of the Rule:
  - Uses Bioassay testing as definitive tool
  - Bioassay overrides chemistry
- Numerical Chemistry Criteria:
  - … are based upon benthic effects concentrations.

    Chemistry is a good indicator of impact, but bioassay remains the definitive assessment tool.
- Framework consists of a two-tiered level of exceedances:
  - SQS/SCO (Sediment Quality Standards/Sediment Cleanup Objectives)
  - CSL (Cleanup Screening Level)

    NOTE: CSL in Part V is equivalent to SIZmax in Part IV
- What is the "two-tiered" framework?
  - SQS/SCO: Lower tier (No Adverse Effects)
  - CSL/SIZmax: Upper tier (Minor Adverse Effects)



Sediment Quality Standards: Lower Tier

(16) "No adverse effects" means a level of effects that:

(a) Has been determined by rule by the department, except in cases subject to WAC 173-204-110(6); and

(b) Meets the following biological criteria:

(i) No acute or chronic adverse effects to biological resources as measured by a statistically and biologically significant response relative to reference or control,

as appropriate, in any appropriate biological test as defined in WAC 173-204-200(3); and

(ii) No acute or chronic adverse biological effect per (b)(i) of this subsection as predicted by exceedance of an appropriate chemical or other deleterious substance standard, except where the prediction is overridden by direct biological testing evidence pursuant to (b)(i) of this subsection; and

(iii) Does not result in significant human health risk as predicted by exceedance of an appropriate chemical, biological, or other deleterious substance standard.

Cleanup Screening Level (CSL) and SIZmax: Upper tier

(15) "Minor adverse effects" means a level of effects that:

(a) Has been determined by rule by the department, except in cases subject to WAC 173-204-110(6); and

(b) Meets the following criteria:

(i) An acute or chronic adverse effect to biological resources as measured by a statistically and biologically significant response relative to reference or control, as appropriate, in no more than one appropriate biological test as defined in WAC 173-204-200(3); or

(ii) A statistically and biologically significant response that is significantly elevated relative to reference or control, as

appropriate, in any appropriate biological test as defined in WAC 173-204-200(3); or

(iii) Biological effects per (b)(i) or (ii) of this subsection as predicted by exceedance of an appropriate chemical or other deleterious substance standard, except where the prediction is overridden by direct biological testing evidence pursuant to (b)(i) and (ii) of this subsection; and

(c) Does not result in significant human health risk as predicted by exceedance of an appropriate chemical, biological, or other deleterious substance standard.

2013 SMS Rule Changes

What parts of the old SMS rule applied to the WQ Assessment?

The entire SMS was approved by EPA as a WQ standard so all parts were used: Part I, Part II, Part III (SQS), Part IV (SIZmax), Part V (CSL)

Based on the amended SMS rule what parts of the new rule are considered a WQ standard?

- Part I Part II as before
- Part III SQS, Part IV Based on two tiers: SQS and SIZmax
- **Part V not adopted as WQ standards and therefore no longer used for WQ listing, just for cleanup.**

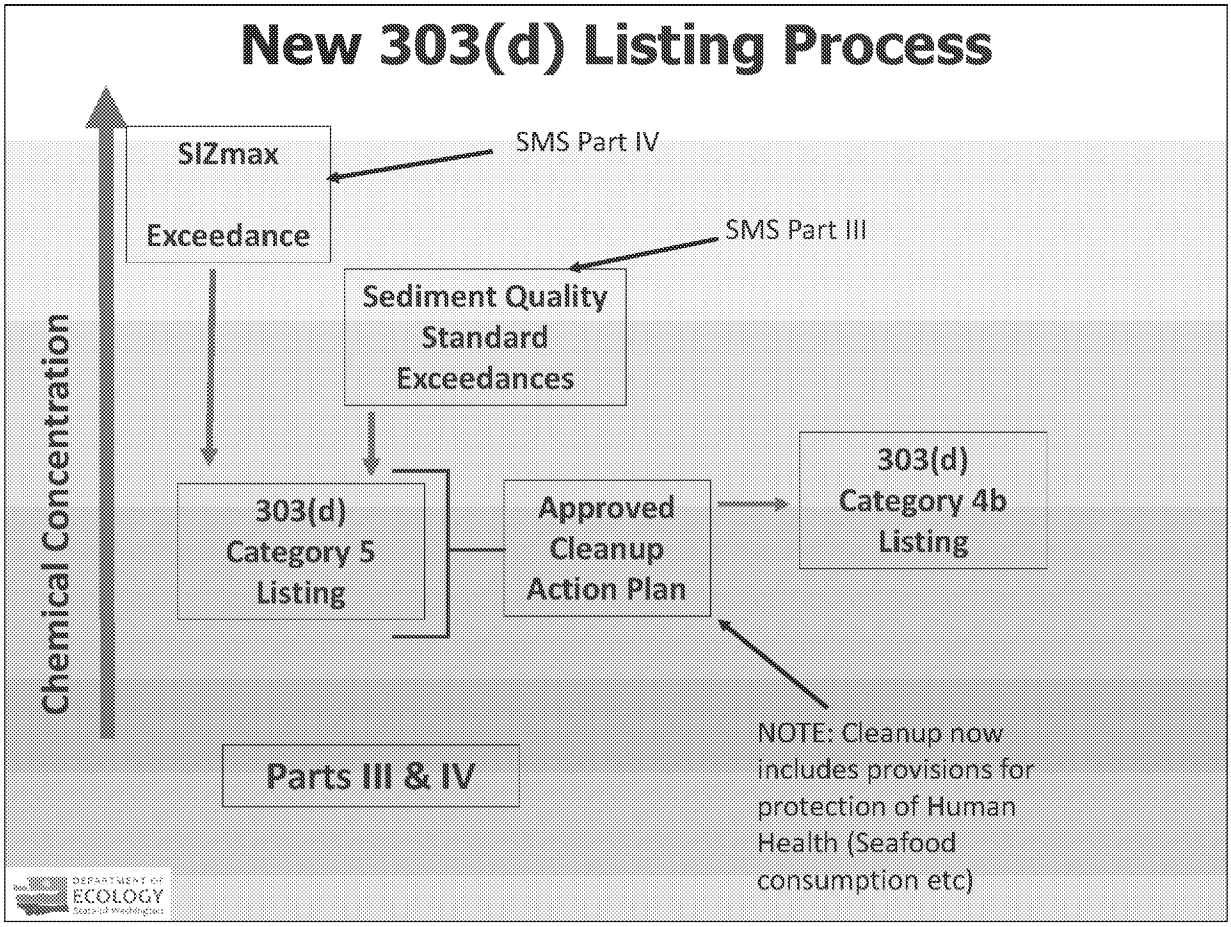
For Water Quality assessment, what now drives Category 5 assessment?

Under the OLD SMS RULE:
Part III (SQS) and Part V (CSL), were both be used in combination to drive category 5 listings.

NOW

These are equivalent criteria

Under the NEW SMS RULE:
Part III (SQS) and Part IV WQ (SIZmax), will both be used in combination to drive category 5 listings.


New 303(d) Listing Process
Chemical Concentration
SIZmax
Exceedance
SMS Part IV
SMS Part III
Sediment Quality
Standard
Exceedances
303(d)
Category 5
Listing
Approved
Cleanup
Action Plan
303(d)
Category 4b
Listing
NOTE: Cleanup now includes provisions for protection of Human Health (Seafood consumption etc)
Parts III & IV
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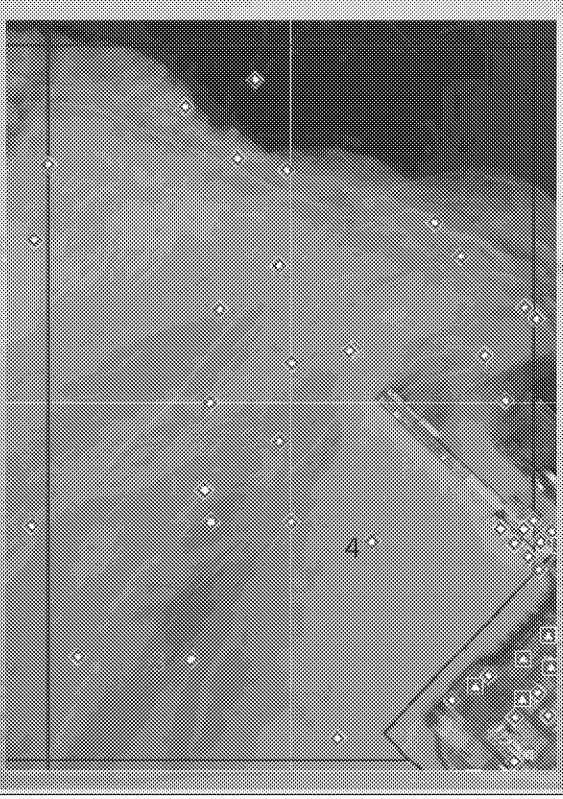
What should drive listings in Category 4B and what are issues that will need to be resolved?

- Part III and IV can be used as a "two-tiered" framework to place waters in Cat 4B.
- Purpose of clean up under water quality standards is to protect benthic use. Since SIZmax (Part IV) and CSL (Part V) are identical, the listing process would not need to change for how Cat 4Bs are determined. Because clean up addresses BOTH human health under the SMS as well as benthic protection, benthic protection is assured.
- The sediment 4B cleanups would address restoring benthic uses and human health issues related to sediment impacts and risks.
- There is continued ongoing coordination between Ecology's Toxics Cleanup Program and Water Quality Programs to ensure all water body listings are addressing all parameters for each listed water body.

Are there any impacts to the 303(d) listing process resulting from the 2013 SMS rule changes?

NOTE: Because Former Part V (CSL) is equivalent to Part IV (SIZmax) then the listing process to Category 5 does not change from previous process.

Example of Category 5 listing (Chemistry)



Station	Concentration (Arsenic) SQS= 57ppm SIZmax= 93ppm	Chemistry
1	65	SQS
2	72	SQS
3	125	SIZmax
¼ Grid Average	87	SQS
4	60	SQS

Average of 3 highest stations is 87: less than SIZmax but greater than SQS so ¼ grid is SQS

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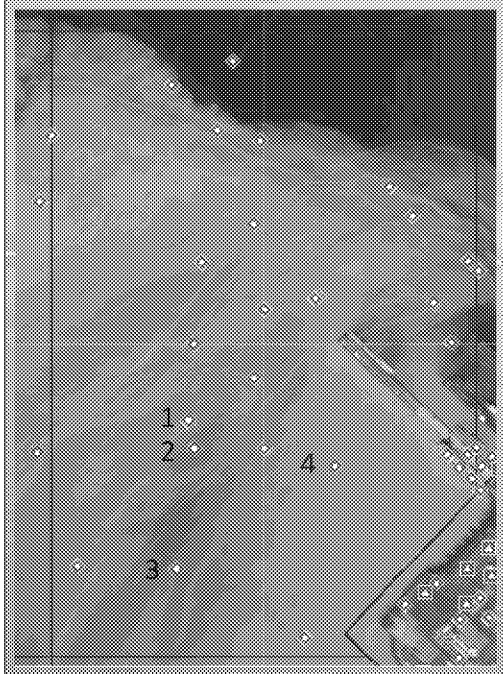
Example of Category 5 listing (Bioassays)

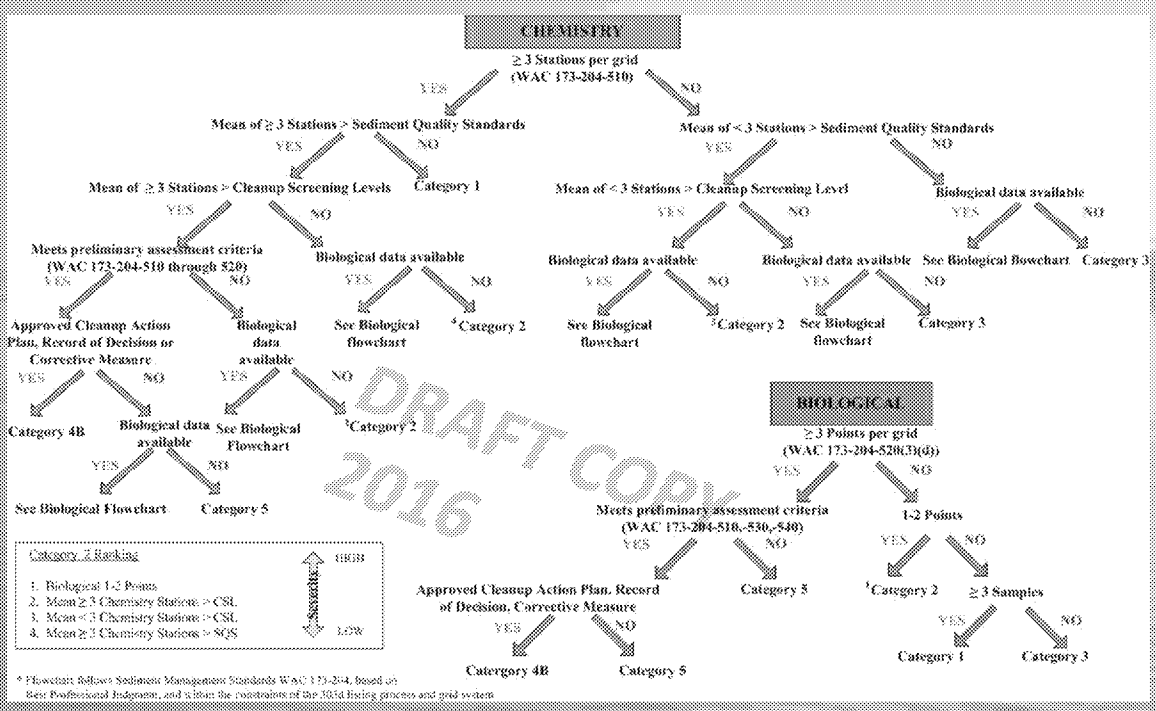


Station	Bioassay	
	Station Exceeds?	Points
1	SIZmax	2
2	SQS	1
3	SQS	1
¼ Grid Total Points	Σ (sum)	4
		Grid = Cat 5
4	SQS	

Note: If ¼ grid bioassay assessment results in total points of 3 or greater then ¼ grid is listed in Category 5

NOTE: Bioassays override chemistry.

2006 Flowchart showing listing process



Note: Some modifications will be made based upon rule changes and comments, errors/omissions

Tribal Seafood consumption Rates in the SMS?

The rule amendments include a narrative that requires cleanup levels to be based on a Reasonable Maximum Exposure (RME) and that the default RME is a tribal exposure scenario.

Uses RME for tribes with greatest consumption rate for the waterbody within which tribal Usual and Accustomed (U and A) fishing ground rights have been established.

References

Sediment Management Standards *Chapter 173-204 WAC* Revised February 2013, Effective September 2013 Publication no. 13-09-055 Department of Ecology's website at https://fortress.wa.gov/ecy/publications/SummaryPages/1309055.html

Sediment Cleanup Users Manual II (SCUM II). Publication number 12-09-057. This guidance document was originally published in 1991 and a preliminary draft was completed in August 2012. This preliminary draft was posted to Ecology's website during the SMS draft rule public comment period in 2012. For information on the updated guidance document, go here: http://www.ecy.wa.gov/programs/tcp/smu/sed_standards.htm

Fish Consumption Rates Technical Report. Publication number 12-09-058. You may access information on the development of this technical report and the final report here: http://www.ecy.wa.gov/programs/tcp/regs/fish/2012/FCR-doc.html

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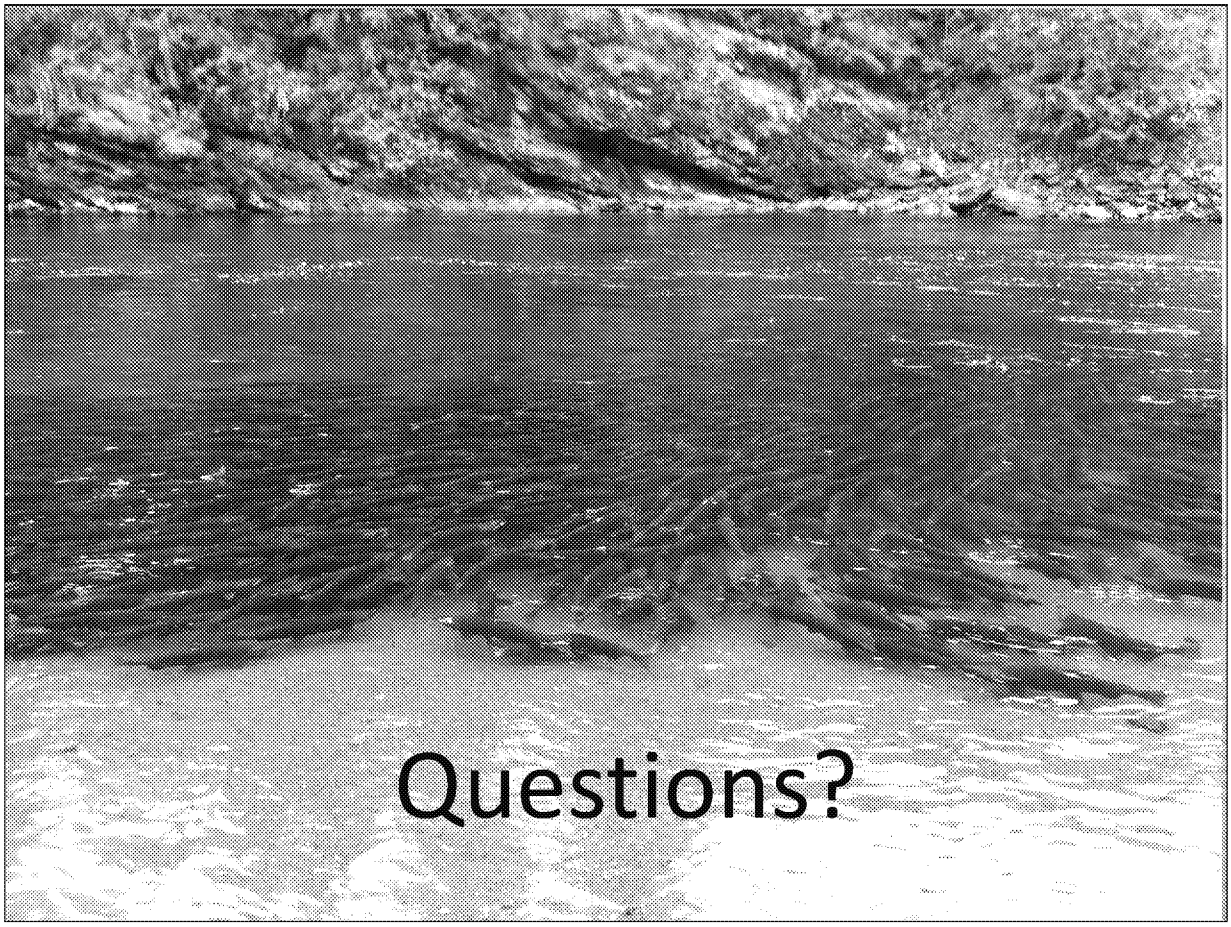
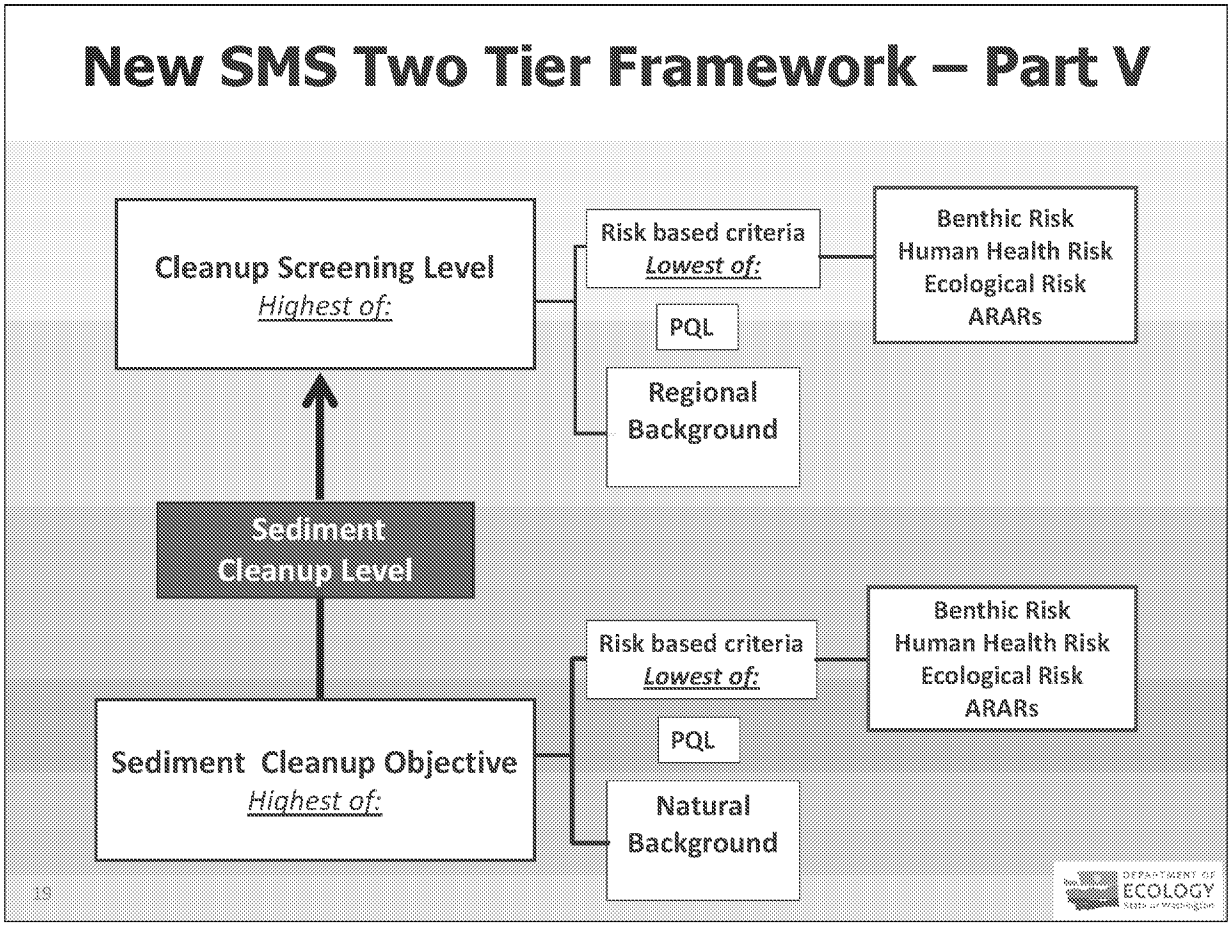

Questions?



Cleanup standards based on benthic risk, human health risk, and upper trophic level risk, PQL and background.