DEPARTMENT OF ECOLOGY
State of Washington

Sediment Cleanup Advisory Committee
November 18, 2011, 9:30 – 3:00
Ecology's Northwest Regional Office in Bellevue, WA
Facilitated by Tamie Kellogg, Kellogg Consulting
Meeting summary by Emily Santee and Kate Snider Floyd|Snider

In Attendance:

Ecology:

Toxics Cleanup Program
- Jim Pendowski
- Dave Bradley
- Martha Hankins
- Chance Asher
- Pete Kmet
- Laura Inouye
- Russ McMillan

Water Quality Program
- Cheryl Niemi

Floyd|Snider for Ecology
- Kate Snider
- Emily Santee

Advisory Committee:

Tim Brincefield – U.S. Environmental Protection Agency (USEPA)
Larry Dunn – Lower Elwha Klallum Tribes
Will Ernst – The Boeing Company (Boeing)
Kristy Hendrickson – Landau Associates
Mary Henley – City of Tacoma
Don Hurst – Colville Confederated Tribes
Lon Kissinger – USEPA
Lionel Klikoff – Department of Natural Resources (DNR)
David McBride – Department of Health (DOH)
Tom Newlon – Stoel Rives
Clay Patmont – Anchor QEA
James Rasmussen – Duwamish River Cleanup Coalition (DRCC/TAG)
Pete Rude – City of Seattle
Alex Smith – Port of Olympia
Glen St. Amant – Muckleshoot Tribe
Jeff Stern – King County
Wendy Steffensen – North Sound Baykeeper
Dave Stone – Oregon State University (OSU)
Mike Stoner – Port of Bellingham
Denice Taylor – Suquamish Tribe
Heather Trim – People for Puget Sound
Chris Waldron – Pioneer Technologies Corporation
Nancy Winters – HDR

Alternate, In Attendance
- Anne Fitzpatrick – AECOM

Attendance by Conference Call
- McClure Tosh – Yakama Nation

Not in Attendance
- Nina Bell – NW Environmental Advocates
- Halah Voges – AECOM

Audience (per sign-in sheet)**:**

Bill Beckley – Ridolfi Inc.
Lori Blair – Boeing
Gary Braun – Tetra Tech
Tad Deshler – Windward Environmental (Windward)
Sherri Duncan – Yakama Nation / Ridolfi Inc.
Nick Garson – Boeing
Bryan Graham – Schnitzer Steel
Kathy Godtfredsen – Windward
Brian Gouran – Port of Bellingham
Mark Johns – Exponent Inc.
Ken Johnson – WY
Lincoln Loehr – Stoel Rives
Lawrence McCrone – Exponent
Dave Moss – Spokane County
Nicole Ott – Crete Consulting
Paul Perlwitz – Nippow Paper
Bruce W. Rummel – Great Water Associates
Pete Stoltz – CalPortland
Priscilla Tomlinson – Integral Consulting
Marian Winewan – WR Consulting, Inc.

Morning Session

- Introductions, Welcome from Martha Hankins
- Presentation by Chance Asher: SMS Rule Revisions: Implementing the Framework
- Input from Advisory Committee
- Input from Audience

Introduction and Welcome from Martha Hankins

We are posting comments approximately weekly on both fish consumption rates (http://www.ecy.wa.gov/toxics/fish.html) and on SMS rule issues. We are accepting comments on the Fish Consumption Rates Technical Support Document until December 31, 2011 and are at fishconsumption@ecy.wa.gov.

We received a couple of questions asking for clarification. One was about the TEQ methodology These will be posted along with responses.

At the last meeting we received a question about site-specific fish consumption rate adjustment. Under MTCA, fish consumption rates can only be adjusted upwards. Under the new SMS standards for sediments, we are looking at the possibility of being able to adjust fish consumption rates either upward or downward, but have not finalized our decision.

Reminder that on December 12th there will be a fish consumption rate workshop at UW at the South Campus Center. We will send out an announcement to the listserv to confirm the start and end times of this meeting, but it will be an all day event.

The first Implementation Tools workshop related to Water Quality Standards rule-making will be December 13th at the Lacey Community Center.

We will be sending out email announcements to all listservs with relevant event information as much as possible, to keep all potentially interested parties involved in the processes.

Please note that we are accepting comments related to the SMS rule update via email at ruleupdate@ecy.wa.gov.

Affiliation	Comment/Question	Ecology Response
Advisory Committee	I'd like to clarify, what are the differences between the fish consumption rate workshop and the Water Quality meeting?	The three integrated Ecology processes are: 1. The process to determine Fish Consumption Rates, which is ongoing 2. SMS Rule Revisions, going on now 3. Water Quality Rule Revisions, which begins at the December 13th meeting Water Quality Standards will be informed by the fish consumption rate but the process to update Water Quality Standards is being addressed in two phases. The meeting Dec 13 is focused on Water Quality Implementation Tools. Human Health criteria, which are informed by fish consumption rates, will be looked at in a second (later) phase.
Presentation by Chance Asher		
There are a few corrections on the slides, as follows: Slide 9 – The fourth bullet should read "*Site* identified by specific chemical from PLP activity" and the fifth bullet should read "*Site* boundaries delineated by concentration above SQS." The "unit" designation is used only if a party has contributed to the sitewide chemical as well as its own chemical contamination; otherwise "site" is used to indicate that a party has contributed only other chemical contamination, and not to the baywide chemical contamination. Also note that this site is on a waterway, not a river. Slide 10 – The legend for the green dot on the figure should read "<4.9 PPM." **There may be other small typos in the presentation slides, we want to stress that this presentation is for illustrative purposes.**		
Advisory Committee	The unit process looks like an interim action cleanup. If a PLP cleans up a discrete site unit, and there is still more to be cleaned up, it seems like that cleanup would be an interim action rather than a completed cleanup.	Comment noted.
Advisory Committee	Are you talking about giving a PLP a liability settlement or will it count as an interim action, as in MTCA, once a PLP has performed a unit cleanup?	The PLP will not be off the hook for the site, but Ecology can provide a settlement for the unit. Ecology will not provide a settlement for the site until further action is taken.
Advisory	Now that we've talked about settlements, thinking back to the first site	That settlement would be a settlement for the entire site, and would be

Committee	(on Slide 9), how would the settlement for zinc work?	complete, because the PLP didn't contribute dioxin (the baywide chemical) to the site.
Advisory Committee	On Slide 13, is the 10^{-6} risk concentration site wide or chemical specific?	It's chemical specific. The 10^{-6} risk applies to single carcinogens, and a HQ=1 for non carcinogens. The 10^{-5} risk level applies to multiple chemicals/exposure pathways. This is the same paradigm as MTCA.
Advisory Committee	How are you defining the biological active zone in the Rule?	We have in the rule a definition that allows for flexibility beyond a default depth of 10 cm, which was included based on comments received at the last meeting.
Advisory Committee	On Slide 13, if regional background is greater than the 10^{-5} risk rate, is the upper limit still greater than 10^{-6}?	Yes. The upper bound is regional background.
Advisory Committee	On Slide 13, does the upper tier correspond to the maximum allowable level?	Yes.
Advisory Committee	Regarding recognition of bioaccumulative chemicals, will the use of biota-sediment accumulation factors (BSAFs) to determine risk be in the rule?	The use and application of BSAFs is controversial. We are not including BSAFs in the Rule language. We intend to look at this in guidance.
Advisory Committee	On Slide 14 on natural background, you're talking about supplementing the available data with new data. Why not bring in data collected under MTCA cleanups to determine background at sites?	We do not have a comprehensive data set for either natural or regional background statewide. This could be done for some sites but current data collected is not applicable to every site or for every area, so additional supplementation will be necessary.
Advisory Committee	How would regional background be determined for a river site?	We haven't worked through a case study for a river yet, but there is the option to include reference stations sampled in recent years to try to establish background, or sampling upstream within the watershed.
Advisory Committee	How are you categorizing sheet flow versus stormwater with respect to point and non-point source categorization?	Once stormwater enters a pipe it is considered a point source. Both overland stormwater flow and stormwater flow in a pipe will influence receiving water and sediment quality, but we do not anticipate sampling near discharge sources. Stormwater is included in general as a "non-point"

		contribution to receiving water and sediment quality, but once it discharges from an outfall, that water is considered a point source. Regional background is meant to include the influence of stormwater (non point source before it enters a point source pipe. But, to determine regional background, we would not allow sampling the area in the depositional zone of a discharge from a point source, including stormwater outfalls.
Advisory Committee	To transpose this concept to mining watersheds – individual mines would all be considered point sources, correct?	Yes.
Advisory Committee	On Slide 14, on the second bullet under Regional Background could that be restated to refer to non-site, non-point sources, instead of "diffuse nonpoint sources," because we are not considering diffuse sources in regional background if they are identifiable as a source?	The language in the rule is more clear on this matter than the slide, and should be referred to instead. Eventually all non point and point sources of stormwater will mingle in the receiving environment, so we are avoiding the use of that language.
Advisory Committee	In order to calculate regional background, you need to define a region. That's not done in the rule. It's not just finding an outer bound of the region, now you also have to exclude sources within the boundary of the region. I don't see how that will work.	When we open up the discussion to questions we'll come back to you for suggestions.
Advisory Committee	Area background can be counted as part of regional background. If it comes out of a pipe someone is responsible – don't just say you know who or what caused it and dismiss the contamination – that's irresponsible.	
Advisory Committee	On Slide 14, what is the Kaplan Meier approach for non-detects? What is a "brightline" approach?	The Kaplan-Meier approach is a statistical method for treating non-detects. It is not a substitution method, for example where non-detects are assigned a value of ½ the detection limit. Instead, the Kaplan-Meier approach uses a mean based on the population. A brightline approach is a comparison to a predetermined value, which you either "pass" or "fail."

Advisory Committee	Did you consider other methods, including parametric and non-parametric distributions? If you're using brightline comparisons, how confident in the number selected for comparison are you?	Consideration has been given to other ways of thinking including both parametric and non parametric, but the methods –in slides are what we're focusing on. We have a statistician on board to evaluate these and other methods.
Advisory Committee	We need to establish a degree of confidence in the values and methods selected. You could do Monte Carlo analysis to quantify false positives and false negatives – we need to ground truth the brightline value selected with real sites.	We're using real data and real sites to determine which sites work for which method. We are planning on conducting performance testing as well. Thank you for the excellent feedback.
Advisory Committee	On Slide 17 on the second bullet regarding site boundaries, could characterization of the vertical and horizontal nature and extent of contamination also apply to determining unit boundaries?	Yes.
Advisory Committee	On Slide 18, you mention using SQS to define the site. Which SQS values are you using, marine or freshwater?	Use whichever one is appropriate at the site. And don't forget, for either type of site, you also have the option to run bioassays.
Advisory Committee	On Slide 18, regarding sources, are you considering air emissions?	Yes, if we know there is a current source, like a hog fuel burner.
Advisory Committee	Don't you have regulatory authority on pipes traversing a property and discharging at the property boundary? It seems like you would if it's a point source on the property.	Yes. Comment noted.
Advisory Committee	I'm trying to figure out how you can get enough data to define a unit – it seems like units are defined too late in the process.	There are lots of different ways to make a preliminary estimation of how far out you may need to sample to determine unit boundaries. You may do preliminary sampling and discover you need to go back out, or you could take a lot of samples and archive the ones you don't expect to need, for reanalysis if necessary. Additionally, as with MTCA, we're going to want to characterize the full site but there may be specific high value environmental habitats that we pay particular attention to.
Advisory	PLPs and consultants will want to justify costs and come up with a methodology	The approach is not just looking at an area and choosing what is a unit, it's

Committee	for unit definition that works. Of course we need to start with point structures like outfalls and structures like piers as areas needing additional attention.	taking all data available at a site and carving out units after analyzing that data. The methodology you mention may be true and may work at some sites but certainly not all sites.
Tamie: I'd like to open up the discussion to general questions and comments at this time.		
Advisory Committee	In the slides today we talked about the RI/FS and the need to characterize the amount of sampling needed to "completely characterize" sediment – I'd suggest replacing "completely" with "adequately."	Comment noted.
Advisory Committee	Regional background could be 10^{-2}, and there is no cap on that. I want regional background to be capped at 10^{-5}. It's appreciated that the fish consumption rate is increasing, but if regional background can be as high as 10^{-2} or higher, we're eliminating all of that work.	
Advisory Committee	My comment would be "don't strive for perfection at the expense of measurable improvement." You've done lots of good work already. Regional background is a vital component of the Rule Revision. We have lots of cleanups yet to be started. Referring to Example C, if a PLP goes in and deals with the eel grass habitat indicated and totally cleans up their site, it could easily be recontaminated after you take care of sources of contamination on site. Non-point sources from backyard burners will recontaminate above the cleanup level, to regional background. It doesn't make sense to clean up a source you have no control over. My advice is "don't lock in to the Rule too quickly" – Ecology needs to retain flexibility.	Regional background is the upper bound for cleanup levels. With "unit" and individual site cleanups, the risk will ratchet down to lower levels. The end goal over time is the lower conservative risk value or MTCA natural background. But we can't get there embayment-wide and maintain that conservative value by dredging and capping to the risk level – it has to happen over time with source control work.
Advisory Committee	In order to move forward, we need to have groundwork to understand background. We in this room aren't sure how to get going in the process. What is the proper sequencing? How can we characterize regional background if Ecology won't or can't?	If we have funding, and that's a big if, Ecology would like to supplement current data for regional and natural background. Since the use of background in sediment cleanupsis something we are required to implement. The question is whether we implement regional background in a new rule revision, or use the current

		MTCA paradigm of natural background. The PLP could play a role in characterizing background.
Advisory Committee	The cluster analysis found in the redlined rules is no longer easy to understand unless you do a lot of analysis and statistics to understand it. What's Step One to get there? We've made progress – we were at 30,000 feet before, and now we're at 10,000 feet, but we're still not on the ground. In response to Ecology Response: More specificity may not be better than what's currently present, but we need to know how the rules will play out.	To summarize – you're saying that the balance of ambiguity (or "flexibility" and clarity isn't correct yet regarding where samples should be collected and how many. The question we struggle with is what to put in rule versus guidance – we don't want to lose flexibility in rule as we've found that is very important with sediment cleanups. What specific items should be in the rule – who should calculate background? We are writing draft guidance and want to have it ready concurrent with the SMS Rule update.
Advisory Committee	We need to run through the process from start to finish – natural background, statistical methods, etc. Ecology needs to establish what regions are in order to help define the box. The PLP can work with Ecology to add more data so that background is not a static number. If you're the first one in to do a cleanup, you can't be responsible for all of the regional background data collection and designation, so how regional background is determined is a key issue. Allowing for units and sites within a bay helps, but does not solve the problem. In the example in the presentation, natural background and regional background are 1.6 and 3.5, which isn't a large enough difference to justify keeping regional background for as difficult as it is to determine.	
Advisory Committee	Achieving a 10^{-5} risk level as the background cap isn't possible, although it is laudable – bioaccumulative chemicals change the risk metric and drive all the values down, sometimes below what is currently achievable with available technology.	
Advisory	I like this approach and think it's the	

Committee	right thing to do – even if we don't yet have a clearly defined concept of regional background. There are people who want to perform cleanups currently. They want to clean up the "hot spot" but not the whole site. Like them, I want to be able to defend that I've done my share and I'm done. I don't want the rule to be so specific that I can't get out of my responsibility – I don't want to do a cleanup so small that I get sucked into the bay-wide cleanup later because I didn't fulfill my responsibility – then I'm paying my share of a big cleanup AND lawyers fees, which obviously isn't in my interest. If I want to clean up a portion of my site because I'm doing redevelopment, and Ecology doesn't want to get involved because it's too small to be of interest to them, then they don't need to be involved, but that's their prerogative and the Rule should allow for that flexibility.	
Advisory Committee	The provisions in the draft SMS Rule revisions create conditions that stop momentum – the question is how do we get PLPs on board for the new rule and to start cleanups? This situation is a game changer. I have negotiated with private PLPs to get a coalition to move forward and do cleanups in Bellingham Bay. The new SMS change on dioxin is making these PLPs nervous. We need to recognize that sites themselves tend to be well defined. Ecology could say Bellingham Bay itself is a site, and that needs to be avoided. We need to keep units. Regional background can be a second level to cleanup beyond current units, in order to meet ever more stringent cleanups, but the first phase of cleanup at these sites [in Bellingham Bay] should be according to current SMS values.	
Advisory Committee	I like the simplicity of SQS and protection of benthic invertebrates. If we layer human health into the Rule, benthic invertebrates are going to be overshadowed.	

Advisory Committee	If natural background is greater than 10^{-5}, then that's what we need to drive to. If you keep regional background as a concept, it should be capped at 10^{-5}.	
Advisory Committee	The driver needs to be implementable. Regardless of if the natural and regional background values are 3 or 1, the carrot is the release of liability.	
Advisory Committee	On the release of liability issue, on a specific site there should be a fund to donate to which goes to the larger harbor cleanup. Otherwise there will be disagreement in how the determination of regional background will be conducted. But if one can contribute to longterm cleanups, then there's a pot to pull from when Ecology needs money to determine regional background at those sites. My concern is that regional background might functionally become area background, and that that will be considered "good enough" and we won't return to it to clean it up. Ten years is too short a timeframe for a cleanup to be completed – it doesn't allow adequate time for monitoring. You can't just say "I cleaned my site" if you don't monitor its status afterwards, because (for example) it could recontaminate from previously unknown on-site sources.	We propose to use a fund similar to the one you mentioned to reach long-term goals. The PLP "cash out" for their contribution to the larger site would go into a fund to pay for additional source control to get baywide concentrations down to the conservative goal of natural background, baywide monitoring cleanup of orphaned sites, etc.
Advisory Committee	On regional background – given this morning's scenario, are there different regional backgrounds for different units or different sites within an embayment? Would regional background be sequentially determined? Would regional background change over time? Reaction to Ecology Response: If there's one regional background for an embayment, then Ecology will probably	We are staying away from MTCA's definition of area background. We would instead use a region, such as an embayment or a watershed, to define regional background. That background value would apply baywide or watershed wide for cleanups. However, we may supplement this definition over time. Additionally, the Rule needs to be at least as stringent as federal "anthropogenic" background requirements, and the Comprehensive Environmental Response,

	get stuck defining regional background.	Compensation, and Liability Act (CERCLA) is not always clear. Could you recommend someone at EPA that Ecology could talk to for clarity?
Advisory Committee	Water quality regional background may be different than SMS background; this should be addressed.	Yes. The Worldwide Pollution Control Association (WPCA) definition of natural background is different than MTCA and includes only naturally occurring chemicals.
Advisory Committee	It's important to retain flexibility in the rule – to modify MTCA's 3 part rule for determination of compliance, and to allow the use of multiple methods, including the use of a brightline, or requiring that no single point be above a standard, etc.	
Advisory Committee	From what you've told us, is the maximum allowable limit collapsing to background?	Yes, for some bioaccumulatives like dioxin, the upper bound risk level of 10^{-5} is generally collapsing to below natural background. With limited analysis we have found that regional background and natural background sometimes are the same value in non-urban areas. Our example is not well differentiated between regional and natural background.
Advisory Committee	Does this mean that institutional controls will be used in units?	Institutional controls can be used in the rule currently, but they are limited in their use. Just relying on a fish advisory is insufficient. There is no good language in the rule on how to implement effective institutional controls. We'll discuss institutional controls more this afternoon. The cleanup timeframes that we're talking about generally involve having institutional controls in place.
Advisory Committee	Among the data used in the small group for the case studies presented, do you think you had an adequate data set to determine regional background?	No – we used current data that was sampled for different purposes. We would need to have a dataset developed specifically for use as regional background to have an adequate data set.
Advisory Committee	We need sediment transport mechanisms and CSM, we shouldn't just base regional background on sediment data.	

Advisory Committee	Regarding the idea that we drive regional background down – do you resample once every ten years? If it goes up (or down) does that affect how PLPs work with regional background values as related to their cleanup requirements?	We have considered resampling every ten years, and resampling every five years, but it all depends on what type of funding is available. We have a monitoring program already set up at Ecology; we might be able to piggyback on that. We anticipate that background will decrease over time, then the PLP cleanup levels would change for new cleanups.
Advisory Committee	What happens if regional background goes up?	That would require more investigation into source control effectiveness.
Advisory Committee	I'm still struggling with some of these concepts – on datasets, would they identify a certain percentage of areas (like 5% of the area) that needs cleanup regardless of the overall cleanliness of the area relative to others in the state. How will the regional background concept drive priorities for cleaning up the whole of Puget Sound and other areas of the state? Reaction to Ecology Response: But it's all over the risk based criteria. The risk based criteria is extremely low– I'm not sure that's where we want to go.	We still have risk based criteria in place to assign priority to sites.
Advisory Committee	If a storm drain is going into the site, will the drain owner be considered the responsible party for the site? Reaction to Ecology Response: All PLPs should be identified up front even before recontamination happens from off-site activities through the storm drain.	The concept is to illustrate that the PLP is responsible for their contribution, but the off-site pipe owner could become a PLP if the offsite activities recontaminate the area the original PLP cleaned up.
Advisory Committee	My biggest concern is that site currently ready to cleanup under the current SMS framework will "hold the phone" and get everyone involved again instead of doing the cleanup they are poised to start.	Look in Section 500 – it has language regarding the grandfather clause. If you have an approved CAP you have grandfathered yourself in to the current SMS framework. We would like to hear from you regarding that language.
Advisory Committee	With only a handful of samplings available, what metric will be used for determination of regional background? A	We are looking at an area weighted average as an option. Please see the slide that shows the current statistical

	weighted average?	metric options we are considering.
Advisory Committee	Once you get outside of certain areas, regional background and natural background are functionally the same value. How many samples are taken, and from where, in order to clearly define data sets for both regional and natural background? A weighted average may be the way to go.	
Audience	We haven't talked about tissue data yet – why not allow tissue chemistry "regional background" to get around sediment regional background vs. natural background? The current SMS rule allows for bioassays so it seems like fish tissue data would be a good way to more clearly identify human health fish consumption risks than BSAF risk predictions based on sediment concentrations.	
Audience	A number of my concerns about regional background have already been addressed. At the Duwamish, we spent too much time talking about what counted as background – in the end it became more of an issue regarding upriver contributions from the Green River. My point is that even in a data rich environment, we spent too much time trying to determine what background was. Ecology doesn't have the time to get PLPs working together to determine background simultaneously.	
Audience	Does the grandfather clause apply to interim actions or just Cleanup Action Plans (CAPs)?	We didn't specify. I'll make a note of it.

Afternoon Session

- Presentation by Pete Kmet: Comparison of MTCA and SMS Remedy Selection Requirements with Proposed Rule Revisions (presentation provided as handout)
- Presentation by Dave Bradley: Institutional Controls
- Presentation by Chance Asher: Source Control
- Input from Advisory Committee
- Input from Audience

Questions and Comments on Pete Kmet's Presentation

Affiliation	Comment/Question	Ecology Response
Advisory Committee	Other than taking the time to read this handout on comparisons between MTCA and SMS rules in great detail at this meeting, how do we know everything is covered?	I tried to be as thorough as possible – the big things are all included in the handout but every detailed comparison might not be made.
Advisory Committee	On Slide 28 concerning rule integration, how did you resolve the differences?	The answer is somewhat specific to each section. For example, the net environmental effects language is still included but we added language related to the overall effectiveness of the remedy. We added language on institutional controls. Source control is still included in the SMS Rule; we didn't bring any new language in. Disproportionate cost analysis (DCA) is not brought in at this point – right now only cost effectiveness is included in the rule. We added language that the remedy should be "permanent to the maximum extent practical". In general, we tried to bring in MTCA requirements so that all of the requirements were in one place – but we had to select what made sense for sediments.
Advisory Committee	Why is it necessary to ensure that MTCA and SMS are specifically consistent? SMS goals can often be achieved with National Pollutant Discharge Elimination System (NPDES) and Water Quality goals, but the exclusive use of MTCA seems like it would preclude this. If there are other policies that would work as well, why bring in MTCA?	We tried to borrow the concepts in MTCA rule that would help flesh out SMS goals.
Advisory Committee	It seems like two cleanups will still occur – one under MTCA and one under SMS, and ne'er the two shall meet. We need a standard	There are lots of similarities between these two rules – the biggest difference is the ten year

	to incorporate the entire site so we don't end up doing two cleanups, one in water and one out of water. Reaction to Ecology Response: I'm not saying sediment sites shouldn't be MTCA sites but some SMS goals might be handled better under other programs. We need flexibility for remedy selection beyond MTCA.	timeframe present in the SMS Rule and some language differences.

Seven Institutional Controls listed in Dave Bradley's Presentation regarding a letter sent from several Non-Governmental Organizations (NGOs) to Ecology's Director:

1. Adequacy of recording control over the longterm
2. Educational plan for those to have the ability to impact institutional controls
3. Implementation of educational plan
4. Monitoring soil/sediment where the institutional control is implemented
5. Action(s) required if institutional control is not working
6. Delegated performance accountability (to ensure that liability for failure is allocated;
7. A surety to undertake each of the above actions

Questions and Comments on Dave Bradley's Presentation

Affiliation	Comment/Question	Ecology Response
Advisory Committee	This [idea that institutional controls can be effective] is where this all breaks down. You can't tell a native population "You can't eat fish." The educational plan is a waste of time.	
Advisory Committee	What does it mean that you're presenting our letter?	We're talking about a glide path of institutional controls that may be incorporated into the SMS Rule or guidance. The timeframes for cleanup are such that institutional controls are needed. We'd like feedback on these things – which to put in the rule and which to put in guidance, what institutional controls do you like and what institutional controls do you dislike.
Advisory Committee	DCA works quite well for SMS. It has the added benefit of being easy to explain to the public. I recommend keeping DCA. Ten years doesn't seem like it would work – especially with the difficulty of determining regional background. You may not get to the goal of background for 50 years – we need to look at the relative speed to background as an important	

	consideration. Additionally, give thought to how mobilization and treatment technology works and how it fits in to the hierarchy of cleanups. Think about the ways a cleanup standard may be applied – adding activated carbon doesn't change the bulk concentration of a contaminant in sediment, but it does change the bioavailability of the contaminant.	
Advisory Committee	I'm concerned about SMS because the current rule revisions would take cost out of play because you can't exceed the "upper tier" concentration. Cost is taken into account if it's a make or break factor, not before.	
Advisory Committee	Time is a big factor in cleanups. With regard to the Spokane River, the Total Maximum Daily Load (TMDL) for dissolved oxygen was a big factor; we extended the cleanup process with the consent of the legislature and increased the cleanup cost by 150-200%. Sometimes there's no way to be able to work a process from start to finish, including installation, operation, and demonstrating reduced concentrations, and still meet the 10 year cleanup timeframe goal. The NPDES permit allows frequent action and the importance of incremental actions shouldn't be discounted.	
Advisory Committee	DCA can work well in determining a cleanup standard and remedy selection.	
Advisory Committee	Institutional controls are lots of work but can reduce risk at a site (i.e. institutional controls manage risk by limiting exposure, even though concentrations in sediment are not actually reduced). How can we select a final remedy if we still hope to meet low natural background levels? When will we be done?	
Advisory Committee	I don't like institutional controls but I recognize their necessity. We need better thinking if we want them to be effective, though. For example PLPs should pay for a shuttle bus to get environmental justice communities to alternate fishing locations, because tribes are not going to just stop fishing even if you put up a sign. We need this type of out of the box thinking because conventional institutional controls don't work.	

Advisory Committee	Institutional controls might have to last to perpetuity and should include mitigation. The list of seven items Dave Bradley included, above, should not be considered complete - it is just a first shot at what institutional controls could entail. But the effectiveness of the controls needs to be proven – we can't just assume they're working.	
Advisory Committee	The DNR uses institutional controls to ensure the proper use of site - i.e. to ensure navigation channels remain navigable, we move posts. These types of institutional control are highly effective.	
Advisory Committee	We need constant surveys – Ecology should evaluate and consider the effectiveness of institutional controls.	
Questions and Comments on Chance Asher's Presentation		
Martha Hankins noted that Cheryl Niemi from Ecology's Water Quality Program is here today and will also be at the next Sediment Cleanup Advisory Committee meeting. We understand that sometimes cleanup and water quality issues are related and are best discussed together, even though these are separate processes and we believe should remain separate processes.		
Advisory Committee	Back to the stormwater outfall question, how will you identify current sources when multiple contributors are present, as with the Twin 96ers?	The source becomes the pipe – not the non-point sources flowing into the pipe.
Advisory Committee	What would happen if Site B was recontaminated with butyl benzyl phthalate (BBP)?	We would have an issue – the original PLP would have to prove that it was not from them.
Advisory Committee	Is there a way to minimize recontamination so that we don't need to do multiple cleanups?	Source control is an essential component to any sediment cleanup. Ecology would work with the other discharger under other programs.
Advisory Committee	If this is an outfall or pipe isn't Water Quality supposed to permit it? Why aren't they, in this example? If you have a constituent of concern going into a site you're cleaning, why don't you do work in advance to stop the recontamination potential?	Yes, Water Quality should be permitting this pipe, but in practice that doesn't always occur. This is a real demonstration but we don't know how frequently it occurs. Some contaminants that are a concern for sediment cleanup aren't regulated by Water Quality under stormwater permits but will be considered under SMS.
Advisory	Recontamination is above a cleanup standard – if the cleanup standard is human	

Committee	health, how can you say you're meeting the standard if you can only ever perform an initial cleanup to regional background?	
Advisory Committee	The pipe scenario presented is typical, in my experience. We should allow the first cleanup to happen, then deal with the next generation of issues as they arise. Another committee member asks: So you have pipes that are discharging contaminants but you haven't already taken care of it? Original commenter responds: Well, dioxin isn't an SMS constituent yet.	
Advisory Committee	We've identified a problem that requires source control to prevent recontamination. Why doesn't NPDES take care of that?	The PLP had a drainage source on their site, which they dealt with so that their uplands doesn't recontaminate the sediment. If the uplands recontaminates the sediment, they would be held liable. But if the contamination is from off-site, the other party who is responsible can be held liable instead.
Advisory Committee	Institutionally, how is Ecology dealing with this type of issue to get sources under control?	We have examples of work in the Lower Duwamish Waterway to address cleanup sites – anyone who may recontaminate is a higher priority. Water Quality, SMS, and NPDES all interact to try and minimize contamination. But, All Known and Reasonable Technologies (AKART) principals don't yet exist in stormwater for all SMS constituents. I also want to point out that in our example, the recontamination may be above SQS, but the contaminant removed was above the Cleanup Screening Level (CSL), so we're not wasting time and money – we're still removing high concentrations of contaminant, and it is still worthwhile to do a cleanup.
Advisory Committee	If you can address the lower concentration, then why wouldn't you take care of both? You shouldn't hold up a cleanup because of a water quality permitting issue.	

Advisory Committee	Stormwater has no effluent limits – without those and monitoring we'll never make forward progress.	
Advisory Committee	I think Ecology should add confirmation monitoring, instead of just relying on modeling.	
Tamie: I'd like to open the floor for open discussion on issues that we have discussed during the afternoon session (source control, institutional controls, etc).		
Advisory Committee	Concerning liability settlements – we still don't know what they will look like. Is the cash out option going to be discussed next time?	Yes.
Advisory Committee	The cleanup standard must be met by active cleanup or active and passive cleanup. I'm assuming that monitored natural recovery (MNR) is acceptable? I think the issue of active cleanup versus MNR is unclear in the rule.. The current language functionally eliminates MNR as an option from someone who is doing a quick read of the rule. You should go through the rule and remove the term "active" when it's not needed.	Regarding your first question, MNR is acceptable if it is accompanied by an active cleanup.
Advisory Committee	The Rule says "MNR starts at the beginning of the cleanup action" in some places. Why was this changed? The language on pages 6, 17, and 18 say different things.	
Advisory Committee	Regarding the ten year timeframe, it often takes more than ten years to get to the point where we have a document that identifies appropriate actions – how can we move PLPs to get enough research to start an action after we have identified a site as high priority? It may be 20 years until we get to the start of the 10 year timeframe for cleanup. Perhaps a timeframe could be added for remedy selection?	We hope clarification of processes in the Rule will help make it move faster. The intent of having clarity in the rule and flexibility to establish site units, retaining the SMS two tier system by including regional background, and settling liability will expedite cleanup. The goal is to avoid the long drawn process and get in the water to cleanup the high concentration units in the nearshore environment.
Advisory Committee	After listening to this discussion, certain terms that I thought I knew the meaning of may not actually mean what I thought they did. For example, what is a "source," what is "source control," what is a "pathway"? Bringing water quality and SMS together may help, but it might also be useful to put a	

	definition in the front of the rule.	
Advisory Committee	The remedy may meet the goals of the remedy but not protectiveness goals if they are health based. If not, we'll never be able to look at a remedy and say "yes, it's protective."	
Advisory Committee	Back to regional background – to me it's unclear that this applies to anything that's a rule. What type of location applies to regional background? Would it apply to a river?	If you're looking at the watershed and the top of the river is a source, then no, regional background is not going to help because the main source of contamination is at the mouth of the river. If we sampled upstream in the watershed (tributaries) that may work well to establish regional background.
Advisory Committee	Dave and I looked at sites across the state and I saw three main places where regional background would apply – the other sites are all too spread out to develop regional background. If regional background is attempted to be applied elsewhere, it's not applicable because there are no sites with data nearby.	The Rule doesn't specify where regional background could be applied but we are looking at geographic distributions of sites in the area. Regional background includes the influence of stormwater. So, areas with a large stormwater influence may be applicable to regional background. Also, we are talking about new sites established by bioaccumulatives – not the current sites we have listed in the Cleanup Status Report. So, the universe of where regional background will apply is unknown at this time.
Advisory Committee	Regional background will work or not work based on how it is applied. Using a geographical understanding of the term "region," Elliot Bay is not a region, but Puget Sound is a region. Looking at the Spokane River or Coolie Dam, you need to go upriver or even out of the state to determine the regional background concentration. Statewide and area-wide designations are not the same as regions.	
Advisory Committee	What if you take regional background out of it – then you have human health risk and the practical quantitation limit (PQL) as the levels that drive cleanups. If you remove regional background, what are you really losing?	If you take regional background out of the mix, risk based levels fall below natural background for a number of bioaccumulatives. It would basically result in the MTCA paradigm of one tier to work within

	Reaction to Ecology Response: Yes, but you still have the limits of the PQL, environmental benefits, and cost that will serve to limit cleanup actions.	to establish a cleanup standard.
Advisory Committee	I don't think that we should be taking a strictly "textbook" approach to defining regions. We should exclude contaminants which are identifiable as being transported from their original source, then look at what nonpoint sources will contribute after those sources are excluded. Our goal is longterm reduction in concentration. We need to do the most good as quickly as possible.	
Advisory Committee	I think the "textbook" definition provided by an Advisory Committee member earlier is closer to the definition of natural background than regional background. We need to incorporate what the site would look like without the source from the PLP – the contamination that remains is regional background. I think it's a useful concept and Ecology needs the flexibility to apply it as needed in order to get a cleanup started. Reaction from Advisory Group member: I don't think you should get to pick and choose when to apply regional background and how.	
Advisory Committee	Source control and regional background are interwined. We need to use models to address this question – it's the simplest and cheapest possible way to begin to answer the question.	
Advisory Committee	My concern with regional background is that it will be applied on a case by case basis, and Ecology will spend tons of resources to define regional background, and no one will agree with it or use is anyway. If we cherry pick who uses regional background, people will argue against it. We still have flexibility even if only technology limitations, cost, and net environmental benefits are considered.	
Advisory Committee	Regional background effectively becomes technical feasibility. It doesn't matter what you call it, but we need to find a process that can be done on a repeatable scale.	
Advisory	My concern is on the settlement side. If you	

Committee	sign off on local liability but Ecology will still determine the longterm end game. People (the public and the city) need to have a say in general liability before we let people out of their liability, or else the public ends up holding the bag. Reaction from Advisory Group member: There is a process, and more and more people are intervening in CERCLA processes.	
Advisory Committee	Isn't Ecology going to offer a baywide solution next time for cashing out?	We don't have a solution or concrete answers at this stage in the process. We have ideas that we are discussing with you. We'd like broader input from the remaining PLPs if someone is cashed out.
Advisory Committee	Regarding technical feasibility, we need to take into account timeframe. How long the remedy works before recontamination and if that length of time is an acceptable one.	
Advisory Committee	Regional background and natural background may not be applicable longterm. Technical feasibility may be a better metric to start with. Waiting until remedy selection to evaluate technical feasibility is not a good plan because you're never done, so the emphasis put on where technical feasibility comes in is also important.	
Advisory Committee	If there is not a large difference between regional background and natural background, sediment cleanup upper and lower bounds aren't very meaningful, so cost and technical feasibility should be the primary considerations to determine the "point in the middle" that is the cleanup target instead. Reaction to Ecology Response: The selection process, not just the final value, for regional background needs to be transparent.	We have a transparent process, where we say "this is what regional background is in this area" then bring it to the public for comment. Based on the discussion today, I'm wondering if regional background can be determined without the State stepping forward to play a role.
Advisory Committee	Site units work and need to exist but the regional concept is a public works issue – how you define, achieve, and manage regional background is important. PLPs are not the ones who are responsible for	There can be some institutional controls, but we really need to focus on limiting creation of contaminants and non-point

	determining non-point regional background.	sources in the first place.
Advisory Committee	On Page 19 of the Rule, regarding the grandfather clause, it says “unless the Department determines the cleanup action is no longer sufficient” which makes the whole grandfather clause moot for the type of sediment cleanups we’re talking about.	So, to clarify, you’re saying this clause makes sense for landfills (as an example) where a liner failure may cause a cleanup to be insufficient, but doesn’t apply to the types of dioxin sediment scenarios we’re currently facing.
Advisory Committee	Regional background needs to be revisited from time to time, it is not a static number.	
Advisory Committee	If we are going to have regional background, Ecology needs to be the one to determine it. It needs to be feasible, because we need to be able to evaluate whether or not concentrations are decreasing, in order to discern if remedies are effective. Currently technologies are outrunning the rules and regulations, as they have been in MTCA. Determining regional background can’t be a lengthy, long process that occurs only once every five or ten years, or it won’t be sustainable, which is the key problem with MTCA. I’m not sure how the cost analysis will work or what is feasible.	
Advisory Committee	We need to bring cleanups together to meet a single standard. We need to mesh MTCA and SMS. Currently we have two sets of analysis to determine the range (upper and lower bound) of a cleanup, then we use disproportionate cost analysis to determine the cleanup, which seems out of sync.	
Advisory Committee	For those of us who lived the Duwamish text and kept track of all the changes on every page of the document, you know that we met with Ecology to pour over every data set-it was a long and in depth process. It will be labor intensive. There should also be an in intense modeling effort to determine where to establish regional background levels. The end point we’re interest in is risk – it wouldn’t be a bad idea to start by looking at fish and back-calculating from there, but that would still be a lengthy and long process.	
Audience	Back in the days of the Hylebos, the effectiveness of source control was evaluated	

	before starting the cleanup, and that worked.	
Audience	In your powerpoint you mentioned sampling solids in catch basins – it's inappropriate to compare those to sediments. Catch basins are typically engineered and don't reflect true sediment concentrations. You need to look upstream from catch basins for that. But it is acceptable to use catch basin data to come up with a "catchbasin background value data set" that individual sites can then compare results from their catch basins to.	
Audience	People want the process to go forward and to be quick – they don't want to clean up more than can be protected from recontamination. We need to use weight of evidence in small grounds with Ecology and make sure that we don't get too wrapped up in terminology.	
Audience	Regarding the institutional control up on the board earlier that "an action plan is necessary if monitoring shows control has failed," what constitutes failure? Clearly dredging of a cap is a failure of the cap, but a fish advisory sign not preventing fishing can't be considered a failure. The risk calculations are design to protect someone who is fishing every day, not an occasional fisherman. Fishing is a choice, and even people who are highly educated with respect to potential risks may still choose to eat fish with higher than acceptable levels of contamination.	
Tamie directs the meeting back to Advisory Committee comments and questions.		
Advisory Committee	I don't know how DCA is done now, but it seems like there is so much subjectivity and wiggle room that DCA would be an excuse to get the outcome you want and make it look good and "scientific" even if it is biased towards your interests.	
Advisory Committee	Modeling isn't terribly accurate in my experience and I'd prefer it not be used. Not everyone is in favor of modeling.	
Advisory Committee	Human health risk determined exclusively based on fish consumption rates is not acceptable because fish are not the only source of risk.	

Ecology asks Advisory Committee: Should we allow DCA to be separate from upper and lower tier cleanup level analysis or should we incorporate it into the process? Should we establish a cleanup standard to allow DCA as part of the process, then select the remedy using DCA again? We thought it made the most sense to select the cleanup standard and remedy in one process with consideration of the DCA.		
Advisory Committee	We've tried to combine DCA with cleanup level and remedy selection in the past and it got a bit hairy – I'd prefer that we keep it separate and sequential.	
Advisory Committee	I, too, prefer to keep the DCA separate – set the cleanup standard, then evaluate technologies that could meet the standard, taking into account disproportionate cost.	This is the scenario we're envisioning: Let's say the upper tier cleanup standard is 100, and the lower cleanup standard is 10 and that you are considering three remedies to meet each standard. Under the proposal, in the FS, you would consider all six options (3 technologies, 2 cleanup levels) and evaluate their relative merits. Right now, theoretically you have to consider cost twice; once at the cleanup standards stage and again when you select a remedy. But you can't evaluate the cost-benefit of different cleanup levels without considering remedial alternatives. So, if you go through this process and select a cleanup standard, you aren't done. You then have to go through the process all over again to select a remedy. It's confusing. In reality, what's happening at sites is both the standard and the remedy are being considered together. This is how it was done at Bellingham Bay. That's what we are proposing here.
Advisory Committee	Reaction to previous Ecology Response: If you want to have the flexibility to come up with a range of reasonable alternatives, pretty	We expect you to pick a range of alternatives that covers the scope, then select to build the final

	soon if you want to explore all alternatives you will need to determine a suite of alternatives for every possible scenario. Reaction to Ecology response: The current Rule language does allow for that, but I'm concerned that increasing the specificity in the rule will eliminate that possibility.	remedy from among the options.
Advisory Committee	I appreciate the effort to simplify the rule. It might be helpful to prescreen or use a range to find alternatives – you can't compare alternatives against a continuous spectrum of possible cleanup values. But prescreening and carrying forward the most plausible alternatives is beneficial.	
Advisory Committee	The last thing I want to see is 20 alternatives in the FS that are run to the ground – that gets expensive to do.	
Advisory Committee	Because you must meet the cleanup standard at the end of ten years, there's a huge incentive for PLPs to put in a cap to show that they have fulfilled their cleanup requirements, because it's not always possible to dredge to low levels. Have you considered the implications of the strong preference for capping that the 10 year timeframe creates?	
Directed Ecology Question to a member of the Audience: To clarify, when you mentioned catch basins, are you including sediment traps?		
Audience	Response to Ecology question above: That depends on the engineered design of the trap. Catch basins can be a source control method, or they can simply be designed to show what's in the pipe, as sediment sampling traps are designed to do.	
Advisory Committee	If you are just looking at a concentration getting to sediment, it may give you a false perception of what's going on, if additional source control efforts are underway. Loading has changed dramatically even if the	

	concentrations remaining in the sediment are still high in the remaining fines. This can be a hard issue to resolve, since concentrations can be extremely high even though the sediment fines may be small enough to remain in suspension at the outfall's discharge point.	
Advisory Committee	The current rule language includes mention of "state of the art best management practices (BMPs)." New BMPs are being developed all the time that work in some places and under some circumstances but not others. Are you going to be updating and continuing to look for what works in the Guidance, or will you keep the language vague?	
Advisory Committee	What is the method to determine the contribution from stormwater? Sediment sampling at the point of discharge? We need weight of evidence to determine stormwater's contribution, including modeling, empirical evidence, catch basin sampling, etc. There are a number of good examples of weight of evidence analysis performed at the Hylebos.	
Advisory Committee	Point by point analysis for SMS chemicals is acceptable for outfalls in some cases, but it's difficult for constituents where we're looking at site averages and bioaccumulative chemicals.	
Advisory Committee	It is incumbent on PLPs to continue monitoring, as PLPs will want to prove they aren't recontaminating a site or waterway. The size fraction and other factors can all play into this analysis, but this type of monitoring and analysis are not relevant to the topic of today's meeting.	
Advisory Committee	Source tracing has been very effective and has aided in enforcement. The Duwamish Valley showed that it works, even though it is complicated.	
Tamie asks Advisory Committee members to identify, in a word or a sentence, what is		

most important to them, i.e.something they would like Ecology to pay attention to in this effort.	
Advisory Committee	I'd like to reemphasize: let me do my cleanups.
Advisory Committee	Sediment recontamination zone.
Advisory Committee	Regional background – what is it?
Advisory Committee	Permitting source control.
Advisory Committee	Add language relating back to water quality regarding source control.
Advisory Committee	More habitat features as part of cleanups.
Advisory Committee	Allowing an increased timeframe to get TMDLs etc increases the time and cost of cleanups, without necessarily achieving better results.
Advisory Committee	Cost is most important. We need a cost subgroup that focuses on cost, not just changes to the rules but we need to consider cost early and often especially because of high cost items like determining regional background.
Ecology Response	I'm not volunteering to do another workgroup, but we do cost/benefit analysis as part of rule changes. Ecology staff is looking at cost and other data as part of this process.
Advisory Committee	We need to retain enough flexibility that we can still accomplish cleanups.
Advisory Committee	We need integration between SMS and Water Quality. Inconsistent or lax NPDES permits and water quality standards can derail us.
Advisory Committee	More process is not an option.
Advisory Committee	I wanted more detail and specifics in the rule initially, but now I'm not so sure.
Advisory Committee	Don't make me worse off in the future if I do a unit cleanup today.
Advisory Committee	Keep flexibility.
Advisory Committee	We must determine the amount of source control needed and how to integrate it.
Advisory Committee	We've discussed many topics today, but there are some whoppers that we haven't even touched on, including freshwater standards and holes in the fish consumption rate guidance. Both feed to the upper and lower tier limits and define what we're doing here.