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Subject:	Lon"s Comments on Ecology"s draft sediment management standards
Date:	Monday, October 29, 2012 4:24:44 PM
Attachments:	Draft SMS Rule Amendments Comment Form Lon Kissinger.docx

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Hi,

Attached are my comments on Ecology's proposed sediment management rule amendments.

Please note that though I have reviewed the draft SMS revisions as an EPA Region 10 employee, my comments represent my personal opinions about the rule and my personal take on how EPA regional and national considerations impact the rule. I have not attempted to circulate my comments to other EPA staff members to obtain a consensus EPA regional opinion, and it is possible that other EPA staff might have opinions that differ from my own.

I have circulated the rule and my comments to other EPA Region 10 staff to elicit their opinions on the freshwater ecological standards, public participation provisions, and sites regulated under joint MTCA/CERCLA authority.

Some general observations are as follows:

I think Ecology should consider developing an issues paper to set sediment cleanup standards for PCBs, cPAHs, arsenic, and polychlorinated dibenzo furans that consider human health. In comparing human health risk and background as the basis for cleanup standards, it is likely that the standards for these major sediment site contaminants will be based on background. Having default standards for these contaminants would considerably simplify evaluating cleanups.

Detailed material on important topics (e.g. determination of background and comparison of background and site concentrations, assessment of compliance with CSLs) is not provided in the rule. Ecology has revised its sediment cleanup users manual to incorporate some guidance. It is my opinion that Ecology should have put out the rule and available guidance together for joint consideration. If complete guidance is not available, at a minimum, Ecology should outline the contents of guidance and provide a time line for developing guidance. NOTE: I WILL BE PROVIDING COMMENTS ON ECOLOGY'S CURRENT SEDIMENT HHRA GUIDANCE UNDER SEPARATE COVER.

The reliance on the three station approach used for benthic invertebrate SMS evaluation does not translate well to evaluation of human health risks which is based on the areas receptors traverse.

Use of site area to fish home range ratios and sustainability considerations are not appropriate for assessment of human health risks as they can substantially underestimate risk.

The suggested contents of the RI and FS reports do not provide all the information that is really needed for site evaluation, comparison of cleanup alternatives, and selection of a cleanup action.

Thank you for the opportunity to comment.

(See attached file: Draft SMS Rule Amendments Comment Form Lon Kissinger.docx)

Regards,

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Draft Sediment Management Standards Chapter 173-204 WAC Amendments
Public Comment Form

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15	24	A point based approach is appropriate for protection of benthic invertebrates, but may not be appropriate for standards to protect human health, which will likely be determined on more of an area basis.
24	199	There should be evaluation of the sensitivity of analytical methods with regards to detection of low sediment bioaccumulative contaminant concentrations associated with human health concerns
26	228	Acute also has meanings associated with short term exposure and toxic effects for humans.
28	268	Chronic also has implications for human exposure.
31	325	Do you want to identify risk levels or hazard quotients here?
32	358	Doesn't seem to be a distinction between levels associated with minor vs. no adverse effects. Please clarify.
34	400	Where would intertidal sediments exposed during low tide fit in here. The language: "…on the bed or bottom of a body of water…" doesn't seem consistent with the need to address intertidal sediments.
35	406	Sediment cleanup level and sediment cleanup objective: Add language identifying that the sediment cleanup level is a concentration to actually be achieved?
35	421	Sediment cleanups to protect human health will tend to address contaminant concentrations on an area basis. Clarify this in the definition (e.g. "The site areas, point locations, or sediment cleanup unit where those sediment cleanup levels must be attained.)
36	430	What about human health?
40	516	What tests can be done to determine that sediments don't pose a human health threat? Modify this section to reflect that tests generally are to confirm that

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		sediments don't pose a threat to benthic invertebrates only.
43	574	What about human health criteria?
43	576	Again, what about human health criteria and the suitability of PQLs?
45	Table 1	Consider adding references to literature describing the derivation of each of the SQS values.
48	633	Consider making the general statement that sediment human health criteria will consider exposure to sediment contaminants either by direct contact with sediment or indirect exposure to sediment contaminants via consumption of aquatic organisms that have acquired contaminants from sediments. One might also bring in the concept of reasonable maximum exposure and risk levels of concern.
48	642	Some consideration should be given to providing documentation on derivation of non-anthropogenic background (e.g. procedures or data sources). If this is to be provided in guidance, there should be some discussion of guidance documents to be used.
51	670	The Puget Sound Protocols should be evaluated for reporting limit sensitivity relative to sediment contaminant levels of concern for human health, particularly bioaccumulative contaminants.
56	767	Specifically shall not cause significant human health risks.
68	987	. To what extent has bioaccumulation modeling been considered to evaluate the impact of contaminants on tissue levels in aquatic organisms consumed by humans with consequent health risks?
87	Table II	The values here really should be expanded on to consider human health. Chemical mixtures of concern to human health should also be considered (e.g. cPAHs, polychlorinated dibenzodioxins and furans, etc.)
97	1532	Bring in the concept of area of compliance, which is particularly important for human health considerations.

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98	1554	Reference procedures, data or guidance for assessing natural background and comparing background with the sediment cleanup objective.
98	1557	Reference procedures, data or guidance for assessing regional background and comparing background with the CSL.
101	1598	This section is problematic with regards to identifying sediment that is of potential concern for human health. For human health, the focus should be on the exposure area (e.g. all sub and intertidal sediments for bioaccumulative contaminants where exposure is via seafood consumption, sediment areas a receptor could encounter for direct contact).
102	1620	The choice of statistic for comparison of site concentration with a risk based standard is at odds with standard risk assessment practices employed by Ecology under MTCA and EPA under CERCLA. Reasonable Maximum Exposure utilizes the 95% UCL on the mean. Three observations would generally be considered inadequate for computing a 95% UCL.
103	1638	The fact that three stations exceed a human health risk level may be meaningless if the concentration over a broader AREA is less than a level of human health concern because of unacceptable risk or hazard.
105	1693	The concept of relevant exposure area and chemical concentrations should be brought forward here.
105	1697	"…is **not** met." ?
106	1079	Again, station clusters are not an appropriate methodology for identifying sites of concern from a human health perspective. Identification of a sediment cleanup site from a human health perspective should involve identification of receptors, exposure pathways, exposure areas, and risk based concentrations of concern associated with these exposure areas. The relevant statistic for comparison of site conditions to cleanup standards should be the 95% UCL on the mean.
108	1079	SEE comment on Page 106, Line 1709
117	1916	Add the human and ecological receptors present, current and potential future

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		uses of the site.
119	1937	This brief list seems incomplete. The contents of a conceptual site model should be refined and may supplant some of the outline provided below. A CSM definition should be provided at the beginning of the rule. The RI workplan should establish what is known and not known about: 1) Current and potential ecological receptors that may be exposed to site contaminants 2) Exposure pathways and areas over which contaminant exposure could occur 3) Contaminant levels of concern associated with specific pathways and areas (these levels of concern potentially being modified by considerations of background) 4) Location of levels of contamination of concern as well as sources of contaminants 5) Movement of sediments, surface water, and contaminants within the system. 6) The relevance of bioaccumulation to ecological and human contaminant exposure. 7) Identification of natural and regional background appropriate for putting risk based levels of contaminants in context. Ultimately the work plan should identify data gaps that need to be filled.
119	1954	It may be challenging to develop a time line for a more complicated sediment site (e.g. Bellingham Bay, Commencement Bay, the Lower Duwamish Waterway)
121	1979	Assessment of risks to human health was struck from the list of items to be included in the RI Report and should be restored. There also is not an explicit reference to risks to ecological receptors. This also should be included. Also missing from the RI report is selection of appropriate background data and how site concentrations differ from background.
126	2055	It seems that a critical step in evaluation of remedies would be how they would address risks to human health and the environment. Community acceptance of

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		the feasibility study is also important. Please return this to the rule language.
135	2275	Procedures for selecting or developing regional background data need to be provided as well as the statistic that is to be used to characterize background.
137	2308	Page 137, Line 2308: Might identify issues to consider: Site fidelity of organisms, species and preparation consumption preferences of potentially exposed populations, propensity of organisms to accumulate site contaminants, availability of background data.
139	2351	A general feature of MTCA has been to standardize the risk assessment process so as to avoid intense, site specific exposure parameter selection exercises that utilize limited Ecology resources. Standardization of tribal seafood consumption rates surely fall into this category. In this reviewer's opinion, sufficient data exist to establish default tribal seafood consumption rates for human health sediment quality criteria.
139	2358 & 2362	Generally determining reasonable maximum exposure is not dependent on the number of individuals that are exposed. As a corollary, it is not customary to evaluate sustainability on a site specific basis. If a single individual could have a reasonable maximum exposure FCR as determined using a relevant fish consumption study, then that FCR should be used. Consideration of seafood consumption risks should be based on assessment of fish consumption from larger water bodies containing the site of interest. This will insure that individuals can safely (to the maximum degree practicable) obtain fish from any point within the larger water body. This reviewer STRONGLY objects to use of site specific sustainability analyses and ratios of fish home range to site area as methods for adjusting exposure, as these will almost certainly underestimate exposure. For example, it is possible that habitat could attract species to an area with higher sediment contaminant concentrations leading to higher tissue body burdens that are not consistent with site area to home range ratios.
140	2387	What will the process be for developing cleanup levels where: 1) Multiple carcinogens are present and the background concentration of a single carcinogen exceeds 1 in 100,000? 2) Multiple non-carcinogens with the same mode of action are present and

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		the background concentration of a single carcinogen causes the HI to exceed 1?
174	2890	Determination as to whether or not a cleanup action protects human health will not be possible if the feasibility study report contents do not include an analysis of the human and environmental health protectiveness of each potential remedy. The minimum requirements of the cleanup action should be cross referenced with the contents of the RI and feasibility study reports.
177	1944	Considerer specifying: 1) Implementation of source control, potentially considered at line 2946 2) Background, potentially considered at line 2946 and which also may have been considered in developing cleanup standards.
178	2968	Again, the contents of the RI and FS study reports need to be reviewed.
188	3147	Where are data quality objectives for sampling identified and where is there an analysis of how the proposed samples satisfy data quality objectives?
		.

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