Dorrah, Adrienne (ECY)

From: Draves, Mary (MF) [MFDraves@dow.com]
Sent: Monday, October 29, 2012 6:32 PM
To: ECY RE TCP Rule Updates
Cc: Draves, Mary (MF)
Subject: Re: Comments on the Proposed Amendments to the Sediment Management Standards Rule, WAC 173-204, August 15, 2012 Review Version
Attachments: SMWG Comments on Proposed Sediment Management Standards Amendments.pdf.pdf.pdf

Follow Up Flag: Follow up
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Ms. Adrienne Dorrah

The Dow Chemical Company ("Dow") is submitting the comments dated October 25, 2012, submitted to you and the Washington Department of Ecology, by the Sediment Management Work Group ("SMWG"), as its own comments. Dow is a member of the SMWG. Dow supports the recommendations that the SMWG has on the State of Washington's proposed rule amendments and so incorporates those comments as its own comments.

Thank you for your consideration of the comments on the SMWG and Dow.

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October 25, 2012

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Re: Sediment Management Work Group's Comments on the Proposed Amendments to the Sediment Management Standards Rule, WAC 173-204, August 15, 2012 Review Version

Dear Ms. Dorrah,

The Sediment Management Work Group ("SMWG")[1] is an ad hoc group of industry and government parties actively involved in the evaluation and management of contaminated sediments on a nationwide basis. The SMWG has long advocated a national policy addressing contaminated sediment issues that is founded on sound science and risk-based evaluation of contaminated sediment management options. The SMWG recognizes that the management of sites involving contaminated sediments frequently involves unique and complex scientific and technical issues, including assessment methodologies and evaluation of risk and risk reduction options. As an active participant in the national discussions on sediment management issues, the SMWG welcomes the opportunity to offer observations and comments on the Proposed Amendments to the Sediment Management Standards Rule, WAC 173-204 ("Proposed Amendments").

Although we are mindful that the State of Washington and many other states have their own contaminated sediment policies and regulations, we believe it is appropriate to consider the substantial, broad-based national scientific and technical experience and lessons learned on this complex environmental issue. This experience includes U.S. EPA's various guidance documents and technical bulletins, two reports of the National Research Council, *Sediment Dredging at Superfund Megasites: Assessing the Effectiveness* (2007) and *A Risk-Management Strategy for PCB-Contaminated Sediments* (2001), the Interstate Technology & Regulatory Council's (ITRC) work on contaminated sediments (e.g., *Incorporating Bioavailability Considerations into the Evaluation of Contaminated Sediment Sites*, 2011), the results of the 4Rs Workshop conducted by the U.S. Army Corps of Engineers and U.S. EPA (summarized in *The Four Rs of*

[1] See Exhibit "A" for a list of its Members.

Environmental Dredging: Resuspension, Release, Residual, and Risk, Bridges, et al. 2008, ERDC/EL TR-08-4), and the collective national experience in addressing contaminated sediment sites. These sources generally and uniformly support the development, evaluation and implementation of all available remedial options and focus on optimizing risk-reduction in a cost-effective manner.

The State of Washington's current review of the Sediment Management Standards offers an excellent opportunity to promulgate revisions to the Sediment Management Standards that expedite cleanups by incorporating scientific, technical and policy advances learned through prior efforts to manage contaminated sediment sites across the country. Many of the key scientific, technical and policy advances are embodied in the *11 Risk Management Principles for Contaminated Sediment Sites* (U.S. EPA 2002)[2] and the *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites* (U.S. EPA 2005)[3] ("Guidance") as well as in evolving risk-based approaches by many states.[4] The SMWG's review of the Proposed Amendments has identified a number of critical areas where the Proposed Amendments do not comport with the national state-of-the-practice focus on using a risk management framework to develop and evaluate sediment management options based on site-specific conditions. In particular, the Proposed Amendments do not embody a risk management framework for selecting a risk-reduction focused remedy. Moreover, the Proposed Amendments are likely to have the unintended consequence of to making progress at sediment sites in the State of Washington even more difficult to achieve. Thus, the Proposed Amendments should be withdrawn and new amendments drafted that comport with the Sediment Cleanup Advisory Committee's recommendations and state-of-the-practice national policy, which embodies key scientific and technical advances in managing contaminated sediment sites.

The comments below offer more discussion of the significant issues with the Proposed Amendments.

I. <u>The Proposed Amendments Inappropriately Incorporate Bias Against Monitored Natural Recovery and Codify a Presumptive Remedy</u>

The Proposed Amendments are inappropriately biased against monitored natural recovery. Whereas the state-of-the-practice national policy position is that there should be no presumptive remedy[5], the Proposed Amendments codify "active cleanup action" as the presumptive remedy. Please see the following Proposed Amendments for examples of this inappropriate bias.

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[2] United States Environmental Protection Agency. 2002. Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites. OSWER Directive 9285.6-08.

[3] United States Environmental Protection Agency. 2005. Contaminated Sediment Remediation Guidance for Hazardous Waste Sites. OSWER 9355.0-85.

[4] For example, please see the ITRC's Contaminated Sediment webpage, which is available at www.itrcweb.org.

[5] "EPA's policy has been and continues to be that there is no presumptive remedy for any contaminated sediment site, regardless of the contaminant or level of risk." (U.S. EPA 2005 at 7-16).

> "Active cleanup actions are preferred over passive cleanup actions." WAC 173-204-500(5)(b)(i).
>
> "Cleanup actions shall not rely primarily on monitored natural recovery or institutional controls and monitoring where it is technically possible to implement a more permanent cleanup action." WAC 173-204-570(3)(h).
>
> "The department expects that the sediment component of sites and sediment cleanup units with limited contamination will be restored within a single construction season using active cleanup actions such as dredging or capping." WAC 173-204-500(4)(c).
>
> "Passive cleanup actions, such as monitored natural recovery and institutional controls, may be used in combination with active cleanup actions and source control measures to address sediment contamination." WAC 173-204-500(5)(b)(ii). This provision appears to limit the ability to use MNR as a stand-alone remedy.

This bias against monitored natural recovery is inconsistent with the Proposed Amendments' appropriate acknowledgment that some actions taken to meet the sediment cleanup level could have "an adverse impact on the aquatic environment, taking into account the long-term positive effects on natural resources and habitat restoration and enhancement and the short-term adverse impacts on natural resources and habitat caused by cleanup actions." WAC 173-204-560(2)(a)(i)(B). Monitored natural recovery is much less disruptive of sensitive habitats than removal alternatives[6] as well as being less disruptive of the neighborhoods and communities surrounding the site.[7]

Moreover, the hierarchy of the relative degree of long-term effectiveness in WAC 173-204-570(4) inappropriately characterizes the long-term effectiveness of various remedial alternatives by elevating dredging remedies over capping and monitored natural recovery remedies. Each of the three major approaches (monitored natural recovery, capping, and dredging) are capable of meeting both short-term and long-term effectiveness criteria,[8] and, therefore, there should not be a presumption that removal of contaminated sediment is more

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[6] "MNR typically involves no man-made physical disruption of the existing biological community, which may be an important advantage for some wetlands or sensitive environments where the harm to the ecological community due to sediment disturbance may outweigh the risk reduction of active cleanup." (U.S. EPA 2005 at 4-3).

[7] "Other advantages of MNR may include no construction or infrastructure is needed, and may, therefore, be much less disruptive of communities than active remedies such as dredging or in-situ capping." (U.S. EPA 2005 at 4-4).

[8] "It is important to remember that each of the three major approaches may be capable of reaching acceptable levels of both short-term effectiveness and long-term effectiveness and permanence[.]" (U.S. EPA 2005 at 3-15).

effective or permanent than in-situ alternatives.[9] Instead of a presumptive hierarchy of long-term effectiveness, the effectiveness of in-situ (e.g., monitored natural recovery, capping, in-situ amendments) and ex-situ alternatives (e.g., dredging) should be evaluated based the conditions present at the site or sediment cleanup unit.[10] Thus, what constitutes an acceptable level of effectiveness should always be a site-specific decision.

In summary, rather than focus on presumptive active cleanup actions, new amendments should be drafted that are focused on selecting an alternative that represents an appropriate risk reduction strategy for either the site or an individual sediment cleanup unit. At a minimum, the above quoted provisions on the desirability of active cleanups over passive cleanups and the hierarchy of long-term effectiveness should be deleted from the Proposed Amendments.

II. By Ignoring the Contribution of COCs from Point Sources in Setting the Sediment Cleanup Level, the Use of Regional Background as an Upper Bound to the Sediment Cleanup Level may Unnecessarily Result in "Recontamination" of Sites above the Sediment Cleanup Level due to Discharges from Point Sources

The upper bound for the sediment cleanup level for a particular contaminant of concern (COC), the cleanup screening level, may be based on the regional background concentration of the COC. WAC 173-204-560(4)(b). Using the regional background as a potential upper bound for the sediment cleanup level is problematic because, by definition, it excludes point sources discharges and only accounts for diffuse nonpoint sources, such as atmospheric deposition and storm water. WAC 173-204-200(38). "Regional background is the concentration of a contaminant within a department-defined geographic area that is primarily attributable to atmospheric deposition or diffuse nonpoint sources not attributable to any source." WAC 173-204-560(5). Moreover, regional background is specifically anticipated to be lower than "area background,"[11] which is defined in the Model Toxics Control Act regulations as "the concentrations of hazardous substances that are consistently present in the environment in the vicinity of a site which are the result of human activities unrelated to releases from that site." WAC 173-340-200. Thus, although point sources, both permitted and unpermitted, can contribute COCs to a site or a sediment cleanup unit, under the Proposed Amendments, their influence is not considered in setting the sediment cleanup level.

Setting an upper bound for the sediment cleanup level that is lower than a "background" concentration that includes the influence of permitted and unpermitted point sources or area background and implementing a remedy to achieve that artificially low sediment cleanup level will likely lead to recontamination of the remediated area with concentrations of COCs above the sediment cleanup level. Activities to control point sources may not sufficiently limit discharges

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[9] "There should not be necessarily a presumption that removal of contaminated sediments from a water body will be necessarily more effective or permanent than capping or MNR." (U.S. EPA 2005 at 3-16).

[10] "Project managers should evaluate and compare the effectiveness of in-situ (capping and MNR) and ex-situ (dredging) alternatives under the conditions present at the site." (U.S. EPA 2005 at 3-16).

[11] "Regional background is generally expected to be greater than or equal to natural background, and less than area background as that term is defined in WAC 173-340-200." WAC 173-204-200(38).

of COCs to avoid recontamination above the sediment cleanup level. Moreover, even if activities could sufficiently limit discharges of COCs from point sources, those activities often occur on a different time scale than the sediment cleanup action. Thus, due to challenges in reducing discharges from point sources and the temporal disconnect between point source control activities and sediment cleanup actions, recontamination above the sediment cleanup level is likely to occur.

The Proposed Amendments anticipate recontamination due to ongoing discharges: Recontamination of sediment at remediated sites or sediment cleanup units may occur from ongoing discharges." WAC 173-204-500(4)(b). Although the Proposed Amendments state that "further cleanup of recontamination will not be required by the person(s) conducting the initial cleanup when the person(s) can demonstrate, upon department approval, that the recontamination is caused by a source or a permitted release not under the authority or responsibility of the person(s) conducting the initial cleanup," making this demonstration may be exceedingly difficult, time consuming, and expensive in practice. WAC 173-204-500(4)(b). Moreover, setting an artificially low sediment cleanup level and implementing a cleanup action while anticipating recontamination above the sediment cleanup level due to sources or general "area background" does nothing to reduce risk below that which could have been achieved by setting a sediment cleanup level that considered ongoing sources or area background. Nor is this a cost-effective approach to addressing risks posed by impacted sediment. Approving a remedy, therefore, that is virtually certain to be unsustainable on a long-term basis due to continuing sources and recontamination while driving up the cost of the cleanup would not appear to be a progress contaminated sediment policy.

This concern over sediment cleanup levels, recontamination, and overly expansive remedies that do nothing to further reduce risk is not an academic concern. An example, albeit a federal example, of a proposed plan where the cleanup level was set at natural background while fully anticipating that the site would "unavoidably re-equilibrate to levels above natural background over the longer term" due to "urban pollutant influences" in Elliott Bay recently occurred at the Lockheed West Seattle Superfund Site as described in U.S. EPA's proposed plan and its response to the National Remedy Review Board's comments on the proposed plan. The proposed plan expanded the remediation footprint approximately 10 acres by extending it from the Urban Background boundary to the Study Area boundary. This increase of 10 acres of remediation (from 30 acres to 40 acres) is not expected, however, to result in additional risk reduction because it is fully expected that the site's post-construction surfaces will recontaminate to urban background levels within a couple of years of remediation.

A possible solution to the problem described above with the sediment cleanup levels and recontamination would be to recognize the influence of point sources, both permitted and unpermitted, in setting the upper bound for the sediment cleanup level. This approach would result in using a background concentration higher than regional background, but would still be a "background" concentration similar to MTCA's area background. Thus, to reduce risk to the extent feasible without implementing an overly expansive cleanup action, influences beyond those accounted for in setting regional background should be considered when setting the sediment cleanup level. This could be accomplished either by expanding the definition of

regional background to incorporate those influences or using a different "background" as an upper bound to potential sediment cleanup levels.

III. The Concept of "Technically Possible" is Highly Problematic and Should be Modified

The Proposed Amendments add the concept of "technically possible," which is defined as "capable of being designed, constructed and implemented in a reliable and effective manner, regardless of cost." WAC 173-204-200(49). The term is used in defining how the sediment cleanup level should be set: "The sediment cleanup level shall be adjusted upward as required based on what is technically possible and whether meeting the sediment cleanup objective will have an adverse impact on the aquatic environment, including natural resources and habitat." WAC 173-204-500(5)(a)(i)." The language is reiterated in WAC 173-204-560(2)(a)(i)(A): "The sediment cleanup level may be adjusted upward from the sediment cleanup objective based on the following site specific factors: (A) Whether it is technically possible to achieve the sediment cleanup level at the applicable point of compliance within the site or sediment cleanup unit; … ."

This use of "technically possible" is problematic because it specifically excludes any consideration of cost. This could lead to scenarios where it is technically possible to achieve the sediment cleanup level, but where the remedy is overall not cost-effective. For example, at the Lockheed West Seattle Superfund Site (federal site) U.S. EPA, in its proposed plan, elected an alternative that would achieve natural background rather than urban background. No additional risk reduction, however, was anticipated due to the acknowledged likelihood that the site would recontaminate within a couple of years of construction completion to urban background. The additional cost of achieving natural background, albeit temporarily, as well as incorporating additional dredging rather than capping into the proposed plan raised the cost of the remedy from $18.6 million to $48.1 million. The additional $30 million was not anticipated to buy additional risk reduction as the alternative was not expected to measurably reduce risks to human health via the fish consumption pathway.

Rather than encouraging expedited cleanups, the exclusion of cost considerations in determining what is technically possible will likely impede progress at sediment sites. Allocation at multi-party sites becomes more difficult and time consuming as the anticipated cost of the remedy increases. Parties are also less likely to move forward with projects that unnecessarily consume resources but do not yield greater long-term risk reduction benefits. Thus, to avoid impeding progress at sediment sites, the "regardless of cost" phrase should be deleted from the definition of "technically possible."

IV. Ten Year Time Frame for Site Restoration

The Proposed Amendments significantly and unrealistically shorten the maximum timeframe for meeting sediment cleanup levels. Instead of continuing to use ten years following completion of the cleanup action as the timeframe for meeting sediment cleanup levels, the Proposed Amendments have changed it to ten years from the start of the cleanup action. Given the extended duration of construction for large sediment sites (some requiring 10 to 15 years of construction alone), requiring achievement of sediment cleanup levels within ten years of the

initiation of the cleanup action is unrealistic. Thus, the Proposed Amendments should eliminate the proposed change from ten years following completion to ten years from the start of the cleanup action.

V. Recommended Changes to Definitions

The following definitions should be revised as described below: monitored natural recovery and natural recovery.

The definition of "monitored natural recovery" is too prescriptive and it should be revised to preserve regulatory flexibility to address site-specific needs. Monitored natural recovery is defined as "a form of natural recovery that includes regular monitoring of sediment quality, tissue, and biota to assess the effectiveness of natural recovery to restore sediment quality." WAC 173-204-200(26). This definition is too prescriptive because it appears to require monitoring of sediment quality, tissue, and biota regardless of the site-specific appropriateness of metrics associated with them. Thus, please consider the following revision: "a form of natural recovery that includes regular monitoring of sediment quality, tissue, ~~and~~ **or** biota**, as appropriate, on a site-specific basis,** to assess the effectiveness of natural recovery to restore sediment quality."

The definition of "natural recovery" is too narrow because it focuses on deposition. Natural recovery means:

> "physical, chemical or biological processes that act, without human intervention, to reduce the toxicity or concentration of contaminated sediment. *The most common form of natural recovery is the natural deposition of a layer of clean sediment over an area of contaminated sediment resulting in burial of contaminated sediment below the biologically active zone. The natural process of sediment mixing, and degradation of some contaminants, such as polycyclic aromatic hydrocarbons, can also contribute to natural recovery.*"

To avoid confusion over what processes constitute natural recovery, please consider making it more inclusive by deleting everything after the first sentence (indicated in italics above).

VI. Use of Tissue Analysis in Compliance Monitoring

WAC 173-204-560(6)(b) provides for the use of tissue analysis to "identify and screen chemicals of concern in sediment during remedial investigation/feasibility study and to evaluate compliance with sediment cleanup standards." While tissue analysis can, in some circumstances, provide a more direct measure of risk and risk reduction, it should be used only in circumstances where a site-specific determination has been made that the sediment associated with the specific site or sediment cleanup unit is the significant contributor to tissue concentrations. That is, there must be a site-specific demonstrable connection between sediment concentrations and tissue concentrations. As has been observed at many sites, fish tissue concentrations can be influenced by a number of factors unrelated to the remediated sediments at a particular site. WAC 173-204-560(6)(b) should be revised to incorporate a requirement that such a site-specific determination be made prior to the use of tissue analysis.

VII. Delisting Should be Expanded from Site to Sediment Cleanup Units to Expedite Cleanups

The ability of the Department of Ecology to delist a site should be expanded to include the ability to delist partial sites (i.e., sediment cleanup units). WAC 173-204-530(6). Delisting partial sites would encourage early actions within discrete areas of the site (i.e., sediment cleanup units), which in turn, would accelerate progress in achieving risk reduction goals for the overall site. This would fulfill one of the stated purposes in designating sediment cleanup units, which is "expediting cleanups." WAC 173-204-200(47). Additionally, to further encourage expediting sediment cleanups, consider entering into consent decrees with covenants not to sue for cleanup actions at discrete sediment cleanup units when those actions are considered the final remedy (exclusive of long-term monitoring, if necessary). This could greatly aid in brownfield redevelopment in upland areas adjacent to the completed sediment cleanup units.

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The SMWG would be pleased to answer any questions about its comments on the Proposed Amendments to the Sediment Management Standards Rule. For further information, please feel free to contact the SMWG's Coordinating Director, Steven C. Nadeau, c/o Honigman Miller Schwartz and Cohn LLP, 2290 First National Building, 660 Woodward Avenue, Detroit, MI 48226, (313) 465-7492, snadeau@honigman.com.

Respectfully submitted,

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2012 GENERAL MEMBERS (29)

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