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Use of Cooccurrence Based "SQGs" in UCD LEHR Ecological Risk Assessment

Julie Roth. Executive Director
DSCSOC

Julie,

Last year when UCD submitted its initial draft ecological risk assessment for the LEHR Superfund site, I provided DSCSOC with comments on the unreliability of the cooccurrence based sediment quality guidelines (SQGs) that UCD used in the ecological risk assessment. The RPMs found as did DSCSOC, that the initial ecological risk assessment was sloppily prepared with result that UCD was required to submit a revised draft. As I indicated in my recent comments on the second draft of the ecological risk assessment, UCD continued to use the highly unreliable SQGs in the ecological risk assessment. I pointed out, that an understanding of the technical basis of the development of the cooccurrence based SQGs such as Long and Morgan, MacDonald including the so-called NOAA SQIRT values shows that these criteria can readily under and/or over estimate the risks of chemicals in aquatic systems to the environment.

As a follow up to my previous comments, recently I attended a US EPA Superfund, US Army Corps of Engineer and Sediment Management Work Group sponsored conference "Addressing Uncertainty and Managing Risk at Contaminated Sediments Sites that was held St. Louis, MO October 26-28, 2004. Mr. Stephen Ells Technical Manager of the US EPA Superfund sediment program in headquarters helped organize this conference. This conference was the third conference of this type devoted to managing contaminated sediments at Superfund and other hazardous chemical sites. In my recent comments on the continued unreliability of UCDs ecological risk assessment as presented in the second draft, I indicated that Mr Ells indicated at the second conference that it is US EPA Superfund program policy that the cooccurrence based so-called SQGs should not be used for defining the hazard of chemicals at Superfund sites sediments such as for use in an ecological risk assessment.

At the recent St. Louis, MO contaminated sediment management conference I discussed with Mr Ellis the current US EPA Superfund position on the use of co occurrence based SQGs in site identification of hazards of contaminated sediments. He again confirmed that these values should not be used in ecological risk assessments to determine the critical concentrations of chemicals in aquatic sediments.

A review of UCDs LEHR Superfund site October 8, 2004 "Final Draft Site-Wide Risk Assessment-Ecological Risk Assessment" shows that UCD has continued to list cooccurrence based sediment quality guidelines as values that are used to determine excessive concentrations of chemicals in LEHR site aquatic sediments. For example Table 4-8 lists MacDonald et al. 2000 as a Measure of Effects for Sediment Associated Invertebrates. Also this same MacDonald et al. (2000) reference is listed in Section 4.6 as a source of Measures of Effects. As is understand by those who critically review the technical basis of how the Long and Morgan and MacDonald cooccurrence based values were developed these values should not be used to determine if an aquatic sediment contains an excessive concentration of a chemical as well as whether the sediments are adverse to aquatic life.

A review of the references listed in the Literature Cited section of the "Final Draft Ecological Risk Assessment" shows that Long et al.(1995) reference is listed that as far as I can find is not cited in the report text. This appears to be more inadequately prepared reports by UCD.

It is my recommendation that DSCSOC indicate that it is unacceptable for UCD to use cooccurrence based SQGs and that the so-called final draft be redone to eliminate the use of these values. Instead technically valid approaches for evaluating the potential hazards of LEHR site aquatic sediments associated chemicals should be used.

Please contact me if you or others in DSCSOC have questions of comments on this issue.

Fred