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TO: Roland B Hemmett, Ph.D.

FROM: Randall S. Wentsel, Ph.D.

RE: Peer Review of EPA Region 2/CENAN Framework

1. The Framework appears appropriate for screening dredged material to identify Category 1 sediments. However, more information is required to determine if the method is appropriate to identify remediation material.

* Information on the experimental design for tests, number of replicates, statistical tests, and QC, are needed.

* Are detection limits low enough to detect ecologically significant levels.

* Reference sediment is described as clean sandy sediment. "Background" sediment was collected near the HARS and tested. The characteristics of the reference sediment should be similar to the sediment being tested. Data on organic carbon, particle size, etc. should be collected and compared for the sediments. It seemed in the report that "background" sediment was being used as the reference site, if that's the case then it should be stated.

* Up front data should be used to further screen the sediments. Risk assessments for each chemical could identify concentration above which would be ecologically harmful, a concentration where no ecological harm is likely, and a range in between where further testing (i.e. bioaccumulation) is required.

* Metals (other than MeHg) should not be treated the same as the organic compounds with Kow values > 3.5. Some of the metals are micronutrients and they do not biomagnify in the food chain like the high Kow compounds. Assessments could be done to determine if direct toxicity values for metals would be protective of aquatic life, then the 28 day tests would not be needed.

* The use of bioaccumulation tests may be too variable. Use of a negative or positive control may be necessary.

2. I not sure there are "true conservative estimates of risk". The risk based discussions starting on page 11 do not present enough information to answer the questions for #2. For example, on page 15 the Lee et al., 1989 method is presented; has it been peer reviewed, is it protective of assessment endpoints, and it treats metals and hydrophobic compounds the same. It seems that this method is

designed as if protection of the clam and worm are the endpoints. The endpoints are probably higher in the food web. A more thorough discussion of what is being protected would be beneficial. To address the questions in #2 the information in pages 11-15 and appendix A would need to be rewritten to clearly pose those questions and recommend answers. The text of the example testing memo gets in the way of the technical discussion of these issues.

Other comments:
p.12 2nd metals para. The second sentence is misleading. Cu, Ni, and Zn are micronutrients and the organism can, within a given concentration, regulate the amounts of these compounds. These metals don't have the physical/chemical parameters to biomagnify.
P.8. 1st para. Change true to significant; Discuss method for below detection limit values.
P.14. 3rd para. Most recent BG data? Wouldn't mean and std.dev. provide more information?
Table 1 should be divided into four parts (split human health and eco; chemicals into two groups), it's too much diverse information and the table doesn't stand alone.

7.c/d. Are not my area of expertise.

13 Use of a trophic transfer of 1 for metals is appropriate for metals (excluding MeHg) in risk assessments. The conservative aspects of the assessment do not require bioavailability issues to be addressed.

14. Consumption of 6.5 g/day has been used as a number. Recent publications have looked at the distribution of fish consumption by people. A focus on higher consumption populations may be appropriate for specific sites, but the various conservative assumptions in this assessment should be protective of those groups.

15. Comparative risk assessment methods could be used to compare reduced impacts of the HARS site on biota by covering with dredged sediment.

16. Appears appropriate. However, recent attention to endocrine disruptors may require a reassessment of the document.

17. If it is know that the substances have the same mechanism of action, then the responses can be additive, for example, as toxic units. When substances are know to act independently a hazard rate approach is more appropriate.