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September 26, 2002

Ref: 8EPR-EP

Subject: Derivation of Site-Specific Criteria Using EPA's Recalculation Procedure

Dear State or Tribal Colleague,

The purpose of this letter is to provide an answer to a specific question that has arisen regarding EPA's recalculation procedure for modifying national aquatic life criteria on a site-specific basis. The question pertains to the minimum data requirements for derivation of aquatic life criteria specified in *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (EPA, Stephan et. al, 1985), particularly the provision that acceptable acute toxicity test results must be available for species in at least eight different families. EPA's recalculation procedure is included in Appendix L to the Water Quality Standards Handbook (see pages 90-97). Note that the complete text of the Handbook including appendices is now on-line at: http://www.epa.gov/waterscience/standards/handbook/

QUESTION:

Under EPA's recalculation procedure, if deletion of data from the national dataset is determined to be appropriate, must the eight family minimum data requirement be met in order to derive site-specific criteria?

ANSWER:

EPA's recalculation procedure allows the national dataset to be modified so that appropriate site-specific criteria may be established. Three types of modifications are allowed: (1) correction of data, (2) addition of data, and (3) deletion of data. Under the procedure, deletion of data is optional. Where deletion of data is determined to be appropriate, differing methods are described for situations where: (1) eight or more families of aquatic species occur at the site, and (2) fewer than eight families occur at the site. The meaning of the phrase "occur at the site" is very important and this phrase is defined in the procedure. As described below, the eight family minimum data requirement applies in the first, but not the second situation.

The first, more common situation includes all waters where there are eight or more families of aquatic species that occur at the site. For such sites, if deletions result in a dataset that does not satisfy the minimum data requirements, additional pertinent data must be generated such

that the minimum data requirements are met. The generated data must be approved by EPA as appropriate for use in modifying the national aquatic life criteria. The procedure allows derivation of site-specific criteria for water bodies that are not expected to support fish species (e.g., high alpine waters). Where fish species do not occur at the site, data for fish species would not be required. However, following deletion of data, note that acute toxicity data may need to be added to the dataset in order to satisfy the eight family minimum data requirement. The final acute value is then calculated from the four lowest genus mean acute values in the modified dataset using the procedure described in the 1985 aquatic life criteria guidelines.

The second situation[1] addressed by EPA's recalculation procedure includes only waters where the aquatic community is so limited that there are fewer than eight families of aquatic species that "occur at the site." In such cases, acceptable data must be available (or generated, where necessary) for at least one species in each of the families that do occur at the site. The lowest species mean acute value in the resulting dataset is then used as the final acute value. This approach is similar to the approach described in the aquatic life criteria guidelines that allows a species mean acute value for a commercially or recreationally important species to be used as the final acute value if it is lower than the final acute value calculated from the four lowest genus mean acute values.

We want to be clear that the water quality standards regulation at 40 CFR 131.11 authorizes adoption of criteria based on CWA § 304(a) criteria, CWA § 304(a) criteria modified to reflect site-specific conditions (e.g., using EPA's recalculation procedure), or other scientifically defensible methods. Regardless of the method to be used in deriving site-specific criteria, we encourage those interested in deriving site-specific criteria to work closely with Regional water quality standards program staff so that new or revised criteria that are adopted by a State or authorized Indian Tribe can be approved by EPA.

CONCLUSION

Except for waters where the aquatic community is so limited that there are fewer than eight families that "occur at the site", the eight family minimum data requirement must be satisfied in order to derive site-specific criteria that are consistent with EPA's recalculation procedure. Please also note that, in either of the two situations described above, the EPA procedure does not allow selective deletions. That is, if any species is to be deleted, the deletion process must be applied to the entire dataset so that all of the data for species that do not occur at the site are removed.

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[1] Note that decisions regarding whether a particular site falls within this second situation are not made based on the number of families for which acute toxicity data are available (i.e., after the deletion process has been completed). Rather, decisions are made based on the total number of families of aquatic species that "occur at the site." As such, the second situation is limited to a small universe of waters that can be expected to support only a very limited aquatic community.

Water Quality Unit staff are available to review all work plans and proposals to establish site-specific aquatic life criteria to ensure that they are scientifically defensible. An important issue that we intend to emphasize in our reviews is the need to base all site-specific criteria on an adequate dataset. Carefully following the EPA recalculation procedure, in consultation with Water Quality Unit staff, is likely to result in site-specific adjustments that can be approved by EPA. We urge those interested in deriving site-specific criteria using a recalculation approach to follow the EPA procedure and to base such criteria on acceptable acute toxicity test results for aquatic species in at least eight different families.

I hope this information helps to clarify the appropriate application of EPA's recalculation procedure. If you have questions or comments, please contact Bill Wuerthele, the Regional Water Quality Standards Coordinator, at (303) 312-6943, or David Moon at (303) 312-6833.

Sincerely,

Nathaniel J. Miullo, Chief
Water Quality Unit