

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Part 132**

[FRL-5649-7]

Proposed Selenium Criterion Maximum Concentration for the Water Quality Guidance for the Great Lakes System**AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Proposed rule.

SUMMARY: EPA is proposing a new acute aquatic life criterion for selenium in the final Water Quality Guidance for the Great Lakes System (the Guidance) that was published on March 23, 1995. The U.S. Court of Appeals for the D.C. Circuit vacated the 1995 acute selenium criterion on September 19, 1996. The proposal takes into account data showing that selenium's two most prevalent oxidation states, selenite and selenate, present differing potentials for aquatic toxicity, as well as new data indicating that all forms of selenium are additive. Additivity increases the toxicity of mixtures of different forms of the pollutant. The new approach produces a different selenium acute criterion (also called the Criterion Maximum Concentration, or CMC) depending upon the relative proportions of selenite, selenate, and other forms of selenium that are present. EPA believes that the proposed revisions more accurately represent the numerical limits for acute criteria for selenium necessary to protect aquatic life in the Great Lakes System. EPA is not proposing to revise any other aspect of the selenium criteria for aquatic life.

DATES: EPA will accept public comments on the proposal until December 16, 1996.

ADDRESSES: An original and 4 copies of all comments on the proposal should be addressed to Mark Morris (4301), U.S. EPA, 401 M Street., SW, Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: Mark Morris (4301), U.S. EPA, 401 M Street, SW, Washington, D.C. 20460 (202-260-0312).

SUPPLEMENTARY INFORMATION:**I. Introduction****A. Potentially Affected Entities**

Entities potentially affected by this action are those discharging pollutants to waters of the United States in the Great Lakes System. Potentially affected categories and entities include:

Category	Examples of Potentially Affected Entities
Industry	Industries discharging selenium to waters in the Great Lakes System as defined in 40 CFR 132.2.
Municipalities	Publicly-owned treatment works discharging selenium to waters of the Great Lakes System as defined in 40 CFR 132.2.
States & Tribes.	Great Lakes States and Tribes must adopt criteria consistent with EPA's criteria by March 1997.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. This table lists the types of entities that EPA is now aware could potentially be affected by this action. Other types of entities not listed in the table could also be affected. To determine whether your facility may be affected by this action, you should examine the definition of Great Lakes System in 40 CFR 132.2 and examine 40 CFR 132.2 which describes the purpose of water quality standards such as those established in this rule. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

B. Great Lakes Water Quality Guidance

In March 1995, EPA promulgated the final Water Quality Guidance for the Great Lakes System (the Guidance) required under section 118(c)(2) of the Clean Water Act, 33 U.S.C. 1268(c)(2). See 60 FR 15366-15425 (March 23, 1995). The Guidance protects the waters of the Great Lakes and their tributaries by establishing water quality criteria for 29 pollutants to protect aquatic life, wildlife and human health, and detailed methodologies to develop criteria for additional pollutants. It also establishes implementation procedures to help Great Lakes States and Tribes develop more consistent, enforceable water-quality based effluent limits in discharge permits, as well as limits on total maximum daily loads for the Great Lakes System. For a description of the environmental significance of the Great Lakes System and the serious environmental threats it faces (particularly from persistent, bioaccumulative chemicals), see 58 FR 20802.

The ambient water quality criteria included in the Guidance to protect aquatic life set maximum ambient concentrations for harmful pollutants to be met in all waters in the Great Lakes

System. See 40 CFR Part 132, Tables 1 and 2. Great Lakes States and Tribes must adopt criteria consistent with EPA's criteria by March of 1997. CWA Section 118(c)(2)(c). If any State or Tribe fails to meet that deadline, EPA must promulgate criteria applying in that State or Tribe's jurisdiction. *Id.* Once the criteria take effect, permits for discharges of such pollutants into the Great lakes System must include limits as necessary to attain the criteria.

EPA promulgated aquatic life criteria for 15 toxic pollutants including selenium. The selenium criterion was based on field data from Belews Lake in North Carolina. The Criterion Continuous Concentration (CCC) was set at 5 micrograms per liter (µg/L) (the concentration of selenium in a portion of Belews Lake where no chronic effects were observed). The Criterion Maximum Concentration (CMC) was calculated as 19.34 µg/L (by multiplying the CCC by a laboratory-derived acute to chronic ratio and dividing by two). The total recoverable criteria published for selenium in Part 132 were derived with the same data as provided in the criteria document, "Ambient Water Quality Criteria for Selenium—1987" (EPA 440/5-87-008).

Several industries and trade associations challenged the acute aquatic life criterion for selenium. *AIISI v. EPA*, D.C. Cir. No. 95-1348 and consolidated cases. Among the issues they raised was that inorganic selenium has two oxidation states, selenite and selenate, that have different toxicities to aquatic life, and that EPA erred by promulgating a single acute criterion that failed to properly account for the two oxidation states. EPA re-examined the issue, and decided, that it would be in the public interest to propose and provide an opportunity to comment on a new approach for deriving a CMC for selenium that takes into account not only the different toxicities of the two oxidation states described above, but also new data indicating that all forms of selenium are additive. EPA requested the reviewing Court to remand the acute criterion to allow EPA to propose revisions. On September 19, 1996, the U.S. Court of Appeals for the District of Columbia Circuit issued an order vacating the acute criterion.

As a result of the Court's order, the 1995 acute criterion for selenium is no longer effective. Normally, EPA would respond to a vacatur by promulgating an immediately effective final rule withdrawing the vacated regulation from the *Code of Federal Regulations*. This helps inform all interested members of the public that the rule is no longer in effect. In this case,

however, EPA intends to promulgate a new selenium criterion as soon as possible and certainly before the next publication of the *CFR*. Consequently, EPA does not intend to publish a separate notice announcing the withdrawal of the acute criterion.

The action to promulgate a new CMC for selenium for the Guidance is a rulemaking subject to the notice and comment requirements of the Administrative Procedure Act, 5 U.S.C. 551 *et seq.* If EPA promulgates a final CMC for selenium, it will codify it in Table 1(a) to Part 132. Great Lakes States and Tribes will be required to modify their current acute selenium criteria if they are not as protective as the final, revised criterion. Should any State or Tribe fail to make required modifications, EPA would promulgate a CMC for selenium identical to the revised CMC without an additional round of notice and comment.

As explained in more detail below, EPA is not proposing any revisions to the 1995 CCC for selenium codified in Table 2(a) to Part 132. Nor is EPA proposing at this time to amend the 304(a) criteria document for either the acute or the chronic criterion for selenium used in the national program. "Ambient Water Quality Criteria for Selenium—1987" (EPA 440/5-87-008). EPA will consider revising the national document at some future time. The Court's order does not affect the status of either the 1995 CCC for the Great Lakes Guidance or any portion of the national criteria document. EPA does not intend to respond to comments raising issues outside the scope of this proposal.

II. Derivation of the Current Criterion for Selenium

When EPA published a recommended freshwater aquatic life criterion for selenium in 1987, it considered both field data on chronic toxicity from Belews Lake in North Carolina and laboratory data showing chronic effects. A comparison of the data indicated that selenium was more toxic to aquatic life in the field than in standard laboratory toxicity tests. Consequently, to ensure that the criterion would protect aquatic life, EPA derived a chronic criterion, or Criterion Continuous Concentration (CCC) of 5 µg/L for total recoverable selenium from the field data. Because the Belews Lake study did not distinguish between selenite, selenate, and any other form of selenium, and because some forms of selenium can convert to other forms over time (U.S. EPA, 1987), EPA established a single CCC for selenium rather than a separate CCC for selenite and/or selenate.

EPA reasoned that acute effects would also be more severe in the field than in the laboratory. EPA, however, was not able to find any field studies assessing acute effects. Consequently, EPA back-calculated the CMC from the field-derived CCC for total selenium, arriving at a value of 19.98 µg/L, which it rounded to 20 µg/L. See "Ambient Water Quality Criteria for Selenium—1987" (EPA-440/5-87-006).

EPA noted that, had it concluded that laboratory data could serve as a basis for the selenium criteria, there were sufficient laboratory studies on acute effects to establish separate CMCs for both selenate and selenite. EPA calculated that a CMC for selenite (selenium IV) based on laboratory data might have been 185.9 µg/L, while a CMC for selenate (selenium VI) might have been 12.82 µg/L. As explained above, however, EPA chose to base the CMC on field data that did not differentiate between selenite and selenate.

When EPA proposed and promulgated selenium criteria for the Water Quality Guidance for the Great Lakes System, it used the same field-data approach and calculated a CMC of 19.34 µg/L for all forms of selenium. See "Great Lakes Water Quality Initiative Criteria Documents for the Protection of Aquatic Life in Ambient Water" (EPA-820-B-95-004).

EPA is not proposing today any revision to the CCC of 5 µg/L for selenium. The chronic criterion addresses longer-term exposures to selenium under field conditions, including exposure through the food chain. EPA has no field data that can support different chronic criteria for different forms of selenium. Furthermore, EPA believes that current studies show that the various forms of selenium "interconvert" to other forms over these longer time frames, so that the relative proportions of the different forms change during the exposure period. A form that exhibits low toxicity at one point during the exposure period may convert to a different, more toxic form at a different point.

III. Proposed Criterion Maximum Concentration for Selenium

EPA is proposing a revision to the approach used in the final Guidance. EPA is proposing a new CMC for total selenium based on more recent studies which indicate that the toxicities of all forms of selenium are additive. EPA is proposing an equation that will allow calculation of a CMC for selenium based on the relative proportions of selenite, selenate and other selenium forms present in a specific water body. The

toxicities for selenite and selenate used in this equation are based on the laboratory studies cited in the 1987 and 1995 selenium criteria documents, and are identical to the values calculated in the those documents.

A. Peer Review of Initial Draft of Revisions

In July 1996 EPA prepared a draft addendum to the criteria document for the final Guidance setting out the new basis for a CMC for selenium described above. See "The Freshwater CMC for Selenium: Addendum to Ambient Water Quality Criteria for Selenium—1987" (U.S. EPA, July 7, 1996) (the "peer review draft") in the docket for today's proposed action. In August 1996 this document was submitted to three external reviewers for scientific peer review. Pages 3-1 through 3-3 of the peer review draft presented EPA's new data on additivity and a new equation for deriving a CMC that took into account the different toxicities of different selenium forms. Generally, the peer reviewers supported this approach. EPA made minor revisions to this portion of the July 1996 document and is today proposing to incorporate it as an addendum to the final Guidance criteria document for selenium. See "The Freshwater CMC for Selenium: Addendum to Ambient Water Quality Criteria for Selenium—1987" (U.S. EPA, September 30, 1996).

A second portion of the July 1996 peer review draft (pages 3-3 through 3-6) presented the theory that fish in the field are exposed to organic selenium that accumulates in their food sources, and, as a result, carry a "body burden" of selenium that makes them more sensitive to discharges of selenium to ambient water. It also presented a sample calculation of a CMC which accounted for this body burden. The peer reviewers generally thought the theory deserved further investigation, but were concerned about the current lack of supporting data. Due to the lack of empirical support, EPA has decided neither to propose to base the CMC for selenium for the Guidance on this theory nor to recommend that States or Tribes use this theory by including it in the addendum to the criteria document for the final Guidance. Therefore, EPA is not requesting comment on this portion of the peer review draft. EPA hopes to investigate this theory further at some time in the future.

Finally, the July 1996 peer review draft included a section entitled "Appendix: Three Kinds of Pollutants" (pages 3-8 through 3-12) setting out the theory that pollutants affecting aquatic life should be grouped into three

categories based on their bioconcentration and bioaccumulation factors. It recommends that, for 2 of the 3 categories, EPA and the States and Tribes should take into account the "body burden" of the pollutant that the fish in the field accumulate by eating food that has accumulated the same pollutant. EPA did not specifically request comment on this appendix in its charge to the peer reviewers; however, the reviewers were concerned about the lack of data on "body burden" for selenium and would probably have similar concerns about the broader application of the theory set out in the appendix. Due to the need to expedite this rulemaking so that EPA can take final action before the States and Tribes are required to submit their Great Lakes Guidance implementation programs to

EPA for review, EPA is not requesting comment on this broader theory at this time. EPA encourages research on this theory and hopes to investigate it further in the future.

B. Today's Proposal

1. Selenium Chemistry

Selenium takes several forms in ambient waters which can significantly alter its toxicity to aquatic life, as shown below. Inorganic selenium has two oxidation states (i.e., selenium IV, or selenite, and selenium VI, or selenate), which can exist simultaneously in aerobic surface water at pH 6.5 to 9.0. Chemical conversion from one oxidation state to another often proceeds at such a slow rate in aerobic surface water that thermodynamic considerations do not determine the

relative concentrations of the oxidation states. Although selenate (selenium VI) is thermodynamically favored in oxygenated alkaline water, substantial concentrations of both organoselenium (selenium minus II) and selenite (selenium IV) are not uncommon (Burton et al. 1980; Cutter and Bruland 1984; Measures and Burton 1978; North Carolina Department of Natural Resources and Community Development 1986; Robberecht and Van Gricken 1982; Takayanagi and Cossa 1985; Takayanagi and Wong 1984a,b; Uchida et al. 1980).

Various forms of organic selenium also occur in water (Besser et al. 1994; Cutter 1991). Toxicity data for some organic selenium forms are available and are compared below to toxicity data for selenite and selenate:

Compound	Zebrafish ^a (mg/L)	C. Riparius ^{b,c,d} (mg/L)	C. Riparius ^{b,c,d} (mg/L)	Daphne magna ^e (mg/L)
Selenate	18.0	16.2	10.5	2.84
Seleno-DL-cystine	12.0	.....	.....	2.01
Selenite	1.0	7.95	14.6	0.55
Seleno-DL-methionine	0.1	.....	.....	0.31
Seleno-L-methionine .....	.....	5.78	6.88	.....

a. 10-day LC50 (Niimi and LaHam 1976).

b. 48-hr LC50 (Ingersoll et al. 1990).

c. River Water.

d. 48-hr LC50 (Maier et al. 1993).

e. 48-hr LC50 (Maier et al. 1993).

Cutter (1991) described methods for measuring total recoverable and dissolved selenate, selenite, organoselenium, and selenium in water, and other information concerning the measurement of selenium in water has been published by Besser et al. (1994), McKeown and Marinas (1986), Pitts et al. (1994), and Takayanagi and Cosa (1985).

2. Additivity

EPA believes that recent studies demonstrate the acute toxicities of selenate, selenite, and one form of organoselenium are additive; that is, these forms are more toxic together than they are separately. (Hamilton and Buhl 1990; Maier et al. 1993). The studies demonstrated additivity by comparing the toxicities of mixtures to the toxicities of the separate toxicants. Thus, EPA believes that it would be appropriate to establish separate CMCs for selenate and selenite only in situations in which either selenate or selenite is the only form of selenium in the water column. When more than one form occurs in the water, additivity should be taken into account so that the CMC for selenium is a function of the toxicities and concentrations of the

forms. EPA is proposing an equation that can be used to derive an appropriate criterion for total selenium based on the relative concentrations of selenite, selenate, and all other forms of selenium found in a particular water body.

3. Toxicity of Three Categories of Selenium

a. Selenium (IV). EPA is proposing to rely on the laboratory data contained in the 1987 and 1995 criteria documents to establish that the acute toxicity for selenite is 12.83 µg/L.

b. Selenium (VI). EPA is proposing to rely on the laboratory data contained in the 1987 and 1995 criteria documents to establish an acute toxicity of 185.9 µg/L for selenate.

c. Other Forms of Selenium. EPA has not found and believes that sufficient toxicity data do not exist to allow derivation of CMCs for other selenium compounds. Nevertheless, as indicated in the previous table, the acute toxicity of such other forms of selenium appears to be significant with toxicity increasing by as much as 180 times depending on the form of selenium and the test organism. Toxicity tests conducted on the other forms of selenium indicate

that they can be more toxic than selenate and selenite. Consequently, in order not to ignore the toxicity of these other forms of selenium, EPA is proposing to assume that half of the measured or derived concentration of "other" selenium forms is as toxic as selenate and half is as toxic as selenite. EPA believes this default assumption is more reasonable than assuming either that the entire quantity of "other forms" is as toxic as either selenate or selenite, or that it is not toxic. Such assumptions would be more likely to over-predict or under-predict the toxicity of this "other forms" category. EPA is also reluctant to compute any type of "average" from the toxicity data on "other forms" presented in the table above. These data are quite sparse. Moreover, they reflect only organic selenium forms, and the toxicities of other inorganic forms and compounds may be quite different. EPA notes that at least one of the peer reviewers endorsed the proposed approach as an adequate "rule of thumb" in the absence of more specific data. EPA solicits comments on this approach and any alternatives that might be preferable.

4. Equation

Additive toxicity means that the concentrations of the different forms should be added together after adjusting for the relative toxicity of each. For a single toxicant the goal is for the concentration, c , to be less than or equal to the criterion, CMC; that is, the ratio $c/\text{CMC} \leq 1$. For additive toxicants the goal is for the sum of such ratios to be less than or equal to 1. Thus, for two forms of selenium with additive acute toxicities, the concentration of each form should be controlled such that:

$$\frac{c_1}{\text{CMC}_1} + \frac{c_2}{\text{CMC}_2} \leq 1$$

where c_1 is the concentration of selenite and other selenium assumed to have the toxicity of selenite; c_2 is the concentration and selenate and other selenium assumed to have the toxicity of selenate; and CMC_1 and CMC_2 are the CMCs for selenite and selenate respectively. A Criterion Maximum Concentration, CMC_{Se} , for the combined additive forms of selenium can then be calculated from the following equation, which is derived from the previous one:

$$\text{CMC}_{\text{Se}} = \frac{1}{\frac{f_1}{\text{CMC}_1} + \frac{f_2}{\text{CMC}_2}}$$

where f_1 and f_2 are the fractions of total selenium that are treated as selenite and selenate respectively (that is, $f_1 = c_1/c_{\text{Se}}$ and $c_{\text{Se}} = c_1 + c_2$), and $f_1 + f_2 = 1$.

The above equations, when coupled with the assumption that half of the other selenium (including organoselenium) has the toxicity of selenite and half has the toxicity of selenate, behave as follows. If the concentrations of selenite and other selenium are zero ($c_1 = 0$) then the Criterion Maximum Concentration (CMC_{Se}) would be calculated to be 12.82 $\mu\text{g/L}$, the CMC of selenate. On the other hand, if the concentrations of selenate and other selenium are zero, then CMC_{Se} would be calculated to be 185.9 $\mu\text{g/L}$, the CMC of selenite.

If the concentrations of selenite and selenate are equal, then $f_1 = f_2 = 0.5$ (in this special case irrespective of the concentration of other selenium), and CMC_{Se} would be calculated to be 23.99 $\mu\text{g/L}$. In this case, because the total toxicity of the selenite is half as small compared to that of the selenate half, the CMC for selenium is almost (but not quite) double the CMC for selenate.

5. Total Recoverable/Dissolved Concentrations

The CMCs presented above are for total recoverable selenium. The final

Guidance, however, expressed a preference for expressing metals criteria in dissolved form because that form more closely approximates the bioavailable fraction of the metal in the water column. See 60 FR 15373 (March 23, 1995). The Guidance therefore incorporated a methodology for converting total recoverable metals criteria into dissolved metals criteria using appropriate conversion factors. Consequently, EPA is proposing the conversion factor described below for the Part 132 CMC for selenium. Consistent with the position taken in the preamble to the final Guidance, EPA would promulgate the CMC for selenium in the dissolved form if a State or Tribe failed to adopt an approvable criterion.

On the basis of results of simulation tests, Stephan (1995) derived a CMC conversion factor of 0.996 to convert a total recoverable CMC for selenite to a dissolved CMC for selenite. No simulation tests were conducted on selenate, and so 0.996 will be used as a default conversion factor for selenate because both selenate and selenite are oxyions, which are expected to be predominantly dissolved.

The conversion factor of 0.996 was derived on page G-7 of the March 11, 1995 draft document "Derivation of Conversion Factors for the Calculation of Dissolved Freshwater Aquatic Life Criteria for Metals." Page G-8 of this draft explains that the freshwater CCC for selenium is based on data from Belews Lake and that 92.2 percent of the selenium in the water column in Belews Lake was dissolved. Because the CMC in the final Guidance had been back-calculated from the CCC, the conversion factor of 0.922 was applied to both the CMC and the CCC (60 FR 15391-15399, March 23, 1995). In today's proposal, EPA is deriving the freshwater CMC for selenium on the basis of laboratory acute toxicity tests. Consequently, it is appropriate to use the conversion factor of 0.996 for the acute criterion.

IV. Request for Public Comment

EPA is requesting comment on the data and approach for deriving the proposed CMC for selenium. Specifically, EPA is requesting comment on the scientific basis for establishing the additivity of the toxicities of the various forms of selenium (selenate, selenite, and other selenium compounds). EPA also requests comments on the procedure used to account for the additivity of the various forms of selenium in the criterion derivation algorithm. EPA is not requesting comment on the CCC for selenium or on the general methodology

for deriving aquatic life criteria for the Great Lakes Guidance.

V. Executive Order 12866

Under Executive Order 12866 (58 FR 51735, October 4, 1993), EPA must determine whether the regulatory action is "significant" and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is not a "significant regulatory action" and is therefore not subject to OMB review.

Once promulgated, the acute selenium criterion in today's proposal is not an enforceable criterion until adopted by States or Tribes, or promulgated by EPA for a particular State or Tribe. Therefore, once published as part of the Guidance, the proposed acute selenium criterion will not have an immediate effect on dischargers. Until actions are taken to promulgate and implement the acute selenium criterion (or an equally protective criterion consistent with the Tier I and Tier II methodologies for aquatic life in the 1995 Guidance—60 FR 15373, March 23, 1995), there will be no economic effect on any dischargers.

Under the CWA, costs cannot be a basis for adopting water quality criteria that will not be protective of designated uses. If a range of scientifically defensible criteria that are protective can be identified, however, costs may be considered in selecting a particular criterion within that range. EPA assessed compliance costs for facilities that could be affected by provisions adopted by States or Tribes consistent with the 1995 Guidance. See "Regulatory Impact Analysis of the Final Great Lakes Water Quality Guidance" (EPA 820-B-95-011). In the

regulatory impact analysis (RIA) for the 1995 Guidance an acute selenium criterion of 19.34 µg/L was evaluated and shown to have a minimal impact on facilities in the Great Lakes System because many of the Great Lakes States currently implement selenium criteria adopted under the national program that are similar in stringency.

Today's proposal is limited to the method for deriving a selenium acute criterion ranging from approximately 13 to 186 µg/L, depending on the relative proportions of the various forms of selenium in a facility's discharge. Thus, the method will in many cases result in a selenium acute criterion less stringent than the selenium criteria currently being implemented by the Great Lakes States under the national program, or the criterion that would be developed using existing toxicity data on selenium and the Tier I or Tier II methodologies in the 1995 Guidance. For these reasons, EPA has determined that the acute selenium criterion in today's proposal does not meet the definition of a "significant regulatory action" and is therefore not subject to OMB review.

VI. Regulatory Flexibility Act, as Amended by the Small Business Regulatory Enforcement Fairness Act of 1996

The Regulatory Flexibility Act (RFA) provides that, whenever an agency is required to publish a general notice of rulemaking for a proposed rule, the agency must prepare regulatory flexibility analyses for the proposed and final rule unless the head of the agency certifies that it will not have a significant economic impact on a substantial number of small entities. Regulatory flexibility analyses are to focus on the regulatory requirements small entities will be required to meet as a result of the rule and ways to tailor those requirements to reduce the burden on small entities. *Mid-Tex Electric Cooperative, Inc. v. FERC*, 773 F.2d 327 (D.C. Cir. 1985).

In view of the RFA's purpose and its requirements for regulatory flexibility analyses, EPA believes that today's proposal to replace the vacated acute selenium criterion in the 1995 Guidance with a new method for deriving the criterion will not have a significant economic impact on small entities within the meaning of the RFA. The proposal, if promulgated, will not itself establish any requirements that apply to small entities. Rather, the proposal will establish a minimum water quality criterion for selenium (by establishing a method for determining that criterion). Following publication, the Great Lakes States and Tribes must adopt water

quality standards that are consistent with the promulgated method. In the event that a Great Lakes State or Tribe fails to adopt a standard or adopts a standard that is not consistent with the promulgated criterion, EPA will promulgate a criterion for the State or Tribe. Any economic impact on small entities will result, if at all, only as a consequence of later, discretionary State or Tribal decisions about how to implement any criterion a State or Tribe subsequently adopts (or has promulgated for it). Accordingly, the Administrator certifies that this proposal will not have a significant economic impact on a substantial number of small entities.

While there is no statutory requirements for regulatory flexibility analyses with respect to EPA's action in establishing a revised selenium criterion, EPA did generally assess the potential impact on small entities that the 1995 Great Lakes Guidance would have if it were adopted by States and Tribes. It found that the Guidance as a whole would impose costs of only approximately \$500 per small facility. (60 FR 15383, March 23, 1995). Since the acute selenium criterion is only one of the many requirements imposed by the 1995 Guidance, EPA does not believe that the costs of complying with the revisions to the criterion, as proposed today (if adopted by States and Tribes) would exceed that \$500 per facility estimate. This provides an additional basis for EPA's belief that there will be no significant impact on a substantial number of small entities based on State or Tribal adoption. Consequently, pursuant to section 605(b) of the RFA, the Administrator certifies that the proposed rule, if promulgated, will not have a significant economic impact on a substantial number of small entities.

VII. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal Mandates" that may result in expenditures to State, local, and Tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a

reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted.

Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including Tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of the affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

As noted above, this rule is limited to the method for deriving a selenium acute criterion, which in many cases will result in an aquatic life criterion for selenium less stringent than the selenium criteria currently being implemented by the Great Lakes States under the national program, or that would be developed and implemented using existing toxicity data on selenium and the Tier I or Tier II methodologies in the 1995 Guidance, if adopted by States or Tribes. In those few cases where the selenium acute criterion is more stringent than those currently being implemented by the Great Lakes States, or that would be implemented using the Tier I or Tier II methodologies in the Guidance, it is not significantly more stringent. Therefore, if States or Tribes adopt criteria consistent with today's proposal, they will reduce, in more cases than not, any adverse economic impact that might have been imposed by their current selenium criteria, or selenium criteria developed and implemented using the Tier I and Tier II methodologies in the 1995 Guidance. Consequently, EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. EPA has also determined that this rule does not contain a Federal mandate that may result in expenditures of \$100 million or more for State, local, and Tribal governments, in the aggregate, or the private sector in any one year. Thus, today's proposed rule is

not subject to the requirements of sections 202 and 205 of the UMRA.

VIII. Paperwork Reduction Act

There are no information collection requirements in this proposed notice and therefore there is no need to obtain OMB approval under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*

IX. References

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List of Subjects in 40 CFR Part 132

Environmental protection,
Administrative practice and procedure,

Great Lakes, Indians-lands,
Intergovernmental relations, Reporting and recordkeeping requirements, Water pollution control.

Dated: November 4, 1996.

Carol M. Browner,
Administrator.

For the reasons set out in the preamble title 40, chapter I of the Code of Federal Regulations is proposed to be amended as follows:

PART 132—WATER QUALITY GUIDANCE FOR THE GREAT LAKES SYSTEM

1. The authority citation for part 132 continues to read as follows:

Authority: 33 U.S.C. 1251 *et seq.*

2. In the table to paragraph (a) in Table 1 to part 132, revise the entry for "selenium" and add a new footnote (e) in alphabetical order and a new note to the end of the "Notes" to read as follows:

Table 1.—Acute Water Quality Criteria for Protection of Aquatic Life in Ambient Water

* * * * *		
(a) * * *		
Chemical	CMC (µg/L)	Conversion factor (CF)
Selenium	(e)CMC _{Se}	0.996

* * * * *

(e)

$$CMC_{Se} = \frac{1}{\frac{f_1}{185.9 \mu g/L} + \frac{f_2}{12.82 \mu g/L}}$$

Notes:

* * * * *

The terms "f₁" and "f₂" are the fractions of total selenium that are treated as selenite and selenate, respectively. CMC_{Se} is the CMC expressed as total recoverable selenium.

* * * * *

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