#534

Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants; States' Compliance--Revision of Metals Criteria

[Federal Register: May 4, 1995]

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 131

[WH-FRL-5196-1]

Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants; States' Compliance--Revision of Metals Criteria

AGENCY: Environmental Protection Agency (EPA).

ACTION: Interim final rule, notice of data availability and request for comments.

SUMMARY: EPA is promulgating new aquatic life metals criteria for nine States, Puerto Rico, and the District of Columbia, that are subject to EPA's 1992 National Toxics Rule (``NTR''). These new metals criteria reflect EPA's current policy for setting water quality criteria for metals. This interim final rule establishes metals criteria that are protective of aquatic life and approximate, better than the 1992 criteria, the biologically available fraction of water borne metals to aquatic organisms. Use of the new metals criteria will allow permitting authorities in the nine States, Puerto Rico and the District of Columbia, to establish effluent limitations based on the new metals criteria rather than the 1992 criteria which EPA now considers to be more stringent than may be necessary to protect designated uses for aquatic life. The interim final rule will be in effect while EPA considers public comments and develops a final rule. This rule terminates the Administrative Stay published elsewhere in this issue of the Federal Register.

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DATES: This interim final rule is effective April 15, 1995. Comments on the interim final rule and other data noticed in this preamble will be accepted until July 3, 1995.

ADDRESSES: An original and 3 copies of all comments and references on the interim final rule and data should be addressed to: Revision of the National Toxics Rule-Dissolved Metals Criteria, Comment Clerk; Water Docket (MC-4101), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. The administrative record for this rulemaking is available for review and copying at the Environmental Protection Agency, Office of Water Docket, 401 M Street SW, Washington DC, 20460, Room L102, on weekdays during EPA's normal business hours of 8 a.m. until 4:30 p.m. For access to the Docket materials, call (202) 260-3027 between 9:00a.m.-3:30p.m., for an appointment. A reasonable fee will be charged for photocopies.

FOR FURTHER INFORMATION CONTACT: Timothy J. Kasten, telephone 202-260-5994.

SUPPLEMENTARY INFORMATION:

A. General Background

Regulatory Background

In the NTR, EPA promulgated numeric water quality criteria for 12 States, Puerto Rico, and the District of Columbia, that failed to comply fully with Section 303(c)(2)(B) of the Clean Water Act. (57 FR 60848, December 22, 1992 codified in the Code of Federal Regulations at 40 CFR 131.36).<SUP>1 Those criteria became the legally enforceable water quality standards in the named States, Puerto Rico, and the District of Columbia, for all purposes and programs under the Clean Water Act on February 5, 1993. Included among the water quality criteria promulgated in the NTR were numeric criteria for the protection of aquatic life for 11 metals: arsenic, cadmium, chromium (III), chromium (VI), copper, lead, mercury, nickel, selenium, silver, and zinc.

\1\ In the NTR, EPA determined compliance with Section 303(c)(2)(B) based on the status of State compliance as of 1991, the date of the proposed rulemaking, and then took into account EPA approval actions between the proposed and final rulemaking for those States included in the proposed rule. EPA acknowledges that, due to subsequent State actions to delete or otherwise modify toxics criteria (e.g., see Table 1, 57 FR 60856, December 22, 1992), all States and Territories currently may not be in full compliance with Section 303(c)(2)(B).

The Agency received extensive public comment during the development of the NT[illegible]egarding the most appropriate approach [illegible] expressing the

metals criteria. The principal issue was the correlation between metals that are measured and metals that are bioavailable and toxic to aquatic life.

2. Policy on Aquatic Life Metals Criteria

At the time of the NTR promulgation, Agency policy was to express metals criteria, as recommended in its Section 304(a) criteria documents, as total recoverable metal measurements. Agency guidance prior to the NTR promulgation indicated that metals criteria may be expressed either as total recoverable metal or dissolved metal.<SUP>2 [[Page 22230]] Because the NTR was to cover a substantial number of water bodies of varying water quality, EPA selected what it considered the simplest, more conservative approach and the approach reflected in its criteria documents, to implement the metals criteria, namely the total recoverable method. Accordingly, the metals criteria promulgated in the NTR were expressed as total recoverable metals, although EPA also provided for site-specific criteria development.<SUP>3

\2\ Interim Guidance on Interpretation and Implementation of Aquatic Life Criteria for Metals, U.S. EPA, May 1992. (Notice of availability published at 57 FR 24041, June 5, 1992.)

\3\ See Interim Guidance on the Determination and Use of WaterEffect Ratios for Metals, February 1994, EPA 823-B-94-001.

Thereafter, EPA continued to work with States and other interested parties on the issue of metals bioavailability and toxicity. EPA held a workshop of invited experts on this issue; the results of the consultations were published at 58 FR 32131, June 8, 1993. As a result of these consultations, the Agency issued a policy memorandum on October 1, 1993, entitled: Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria (``Metals Policy''). (The complete October 1, 1993 memorandum can be obtained from EPA's Office of Water Resource Center (202) 260-7786 or the Office of Water Docket.) The Metals Policy states:

It is ow the policy of the Office of Water tha he use of

dissolved metal to set and measure compliance with water quality standards is the recommended approach, because dissolved metal more closely approximates the bioavailable fraction of metal in the water column than does total recoverable metal.

It further states:

Until the scientific uncertainties are better resolved, a range of different risk management decisions can be justified. EPA recommends that State water quality standards be based on dissolved metal. EPA will also approve a State risk management decision to adopt standards based on total recoverable metal, if those standards are otherwise approvable as a matter of law. (See Section 510, Federal Water Pollution Control Act, Public Law 100-4, 33 U.S.C. 466 et seq.)

The adoption of the Metals Policy did not change the Agency's position that the existing total recoverable criteria published under Section 304(a) of the Clean Water Act continue to be scientifically defensible. EPA developed the total recoverable criteria using highquality analytical data and are still scientifically defensible criteria. When developing and adopting its own standards, a State, in making its risk management decision, may wish to consider sediment, food chain effects and other fate-related issues and decide to adopt total recoverable or dissolved metals criteria.

In general, EPA continues to conduct research on metals toxicity to further refine the criteria and their implementation. However, the aim of both the Clean Water Act and EPA policy is that a more effective way of incorporating new science into the water quality program is for the States to promulgate their own standards and implementation policies. The States can then make appropriate updates, rather than relying on Federal promulgations such as today's rule.

3. Litigation and Settlement of NTR Metals Issues

A number of parties brought lawsuits challenging the NTR metals criteria. See American Forest and Paper Ass'n, Inc. et al. v. EPA, Consolida[illegible] case No. 93-0694 RMU (D.D.C.) The Plai[illegible]ffs in those

lawsuits wanted the permitting authorities in the NTR States to use criteria based on dissolved metal rather than total recoverable. After careful consideration of the issue, EPA concluded that it was in the public interest to revise the metals criteria promulgated in the NTR to reflect the Office of Water's new metals policy. On February 15, 1995, EPA and the Plaintiffs filed a partial settlement agreement with the court. Pursuant to the terms of the partial settlement agreement, EPA agreed to issue an administrative stay of the numeric aquatic life water quality criteria (expressed as total recoverable metal) for: arsenic, cadmium, chromium (III), chromium (VI), copper, lead, mercury (acute only), nickel, selenium (saltwater only), silver, and zinc. That stay is published in a separate notice in today's Federal Register. The stay is intended to be in effect only until EPA takes action to amend the NTR by promulgating new metals criteria based on dissolved metal. With today's interim final rule, EPA is promulgating new metals criteria for those metals listed in the stay based on dissolved metal and therefore this action will supersede the administrative stay.

B. Today's Interim Final Rule

EPA's action today revises the NTR that established numeric aquatic life metals criteria for 9 States, Puerto Rico and the District of Columbia (Table 1). (Of the 12 NTR States, aquatic life metals criteria were only promulgated for nine.) The numeric criteria in today's rule reflect the Office of Water's current policy with respect to metals. This action promulgates dissolved metals criteria for those total recoverable metals criteria subject to the Agency's administrative stay.

Table 1.--States Subject to the Revised Metals Criteria \1\

Alaska
Arkansas
California
Idaho
Kansas
Michigan
New Jersey

Vermont
Washington
District of Columbia
Puerto Rico

\1\ Today's interim final rule may have differing applicability for each of the States in this table depending on the State's individual compliance with Section 303(c)(2)(B) of the Clean Water Act. See 40 CFR 131.36(d) for State applicability.

C. Conversion Factors: Total Recoverable to Dissolved Metal

Because EPA's Section 304(a) criteria are expressed as total recoverable metal, to express the criteria as dissolved, application of a conversion factor is necessary to account for the particulate metal present in the laboratory toxicity tests used to develop the total recoverable criteria. Initially, EPA included a set of recommended freshwater conversion factors with the Metals Policy. Based on additional laboratory evaluations that simulated the original toxicity tests, EPA has refined the procedures used to develop freshwater conversion factors for aquatic life criteria. EPA made new conversion factors available for public comment in the context of EPA's Proposed Guidance for the Great Lakes System on August 30, 1994, at 59 FR 44678.

EPA has also conducted saltwater laboratory simulation tests for the development of conversion factors for saltwater metals criteria. The saltwater simulation tests were conducted using the same methodology as the freshwater tests with minor modifications, necessary to account for saltwater. The saltwater test results are being made available with today's rule. The conversion factors in this rule and other technical reports referenced herein, supersede the conversion factors presented in Attachment #2 of the Metals Policy.

Total recoverable to dissolved metal conversion factors were attached to the partial settlement agreement in the form of a draft guidance entitled, Guidance to States Subject to the National Toxics Rule For Setting NPDES Limits During the Stay of the Metals Criteria. (The partial settlement agreement is available from the Water Docket.) The draft guidance used data that were available through December 21, 1994. The [[Page 22231]] conversion factors presented in today's rule reflect the best science available to EPA at the time of promulgation

and contain minor modifications from those in the attachment to the February 15 partial settlement agreement. For each metal specific conversion factor, the changes between the draft guidance and today's rule are less than 10 2E-313PA has determined these changes to be minor.

Freshwater Criteria Conversion Factors

The final freshwater conversion factors used in today's rule are contained in: ``Derivation of Conversion Factors for the Calculation of Dissolved Freshwater Aquatic Life Criteria for Metals'' (U.S. EPA, 1995), available from the Water Docket and are presented in Table 2 below. This study did not include laboratory simulation tests for mercury or silver, therefore, the freshwater conversion factors for mercury and silver used today are from the Metals Policy.

The conversion factors for most freshwater metals were established as constant values. For cadmium and lead however, EPA found that water hardness mediated the conversion factor and should be taken into account when converting total recoverable cadmium and lead criteria to dissolved. Table 2 presents the hardness-dependent conversion factors for cadmium and lead. The hardness-dependent conversion factor for lead was included in the August 30, 1994 Notice of Availability (59 FR 44678). In today's action, EPA is specifically requesting comment on the use of hardness-dependent conversion factor for cadmium.

Table 2.--Freshwater Criteria Conversion Factors for Dissolved Metals

Metal	Conversion factors <SUP>a	
	Acute	Chronic
Arsenic	1.000	1.000
Cadmium <SUP>b	0.944	0.909
Chromium (III)	0.316	0.860
Chromium(VI)	0.982	0.962
Copper	0.960	0.960
Lead <SUP>b	0.791	0.791
Mercury	<SUP>c 0.85	<SUP>d N/A
Nickel	0.998	0.997

Silver..... <SUP>c 0.85 <SUP>e N/A
Zinc..... 0.978 0.986

<SUP>a The conversion factors are given to three decimal places because they are intermediate values in the calculation of dissolved criteria.
<SUP>b Conversion factors are hardness-dependent. The values shown are with a hardness of 100 mg/L as calcium carbonate (CaCO<INF>3). Conversion factors (CF) for any hardness can be calculated using the following equations:

Cadmium
Acute: CF=1.136672-[(ln hardness) (0.041838)]
Chronic: CF=1.101672-[(ln hardness) (0.041838)]

Lead (Acute and Chronic): CF=1.46203-[(ln hardness)(0.145712)]

<SUP>c Conversion factor from: Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1, 1993. Factors were expressed to two decimal places.
<SUP>d CCC for mercury cannot be converted to dissolved, because it is based on mercury residues in aquatic organisms rather than toxicity.
<SUP>e Not applicable, EPA has not published final chronic criteria values for silver.

2. Saltwater Criteria Conversion Factors

Acute saltwater conversion factors are being made available through today's rule. The data and the acute criteria conversion factors for saltwater are contained in: ``Derivation of Conversion Factors for the Calculation of Dissolved Saltwater Aquatic Life Criteria for Metals'' (U.S. EPA 1995). This summary report and its supporting data are available from the Water Docket. Saltwater chronic conversion factors have not been developed separately and therefore are not available for today's rule. Based on close similarities between the freshwater acute and chronic conversion factors, EPA believes that, if calculated, the chronic saltwater conversion factors would be nearly the same as the acute salt water factors. In the absence of these chronic conversion

factors, the saltwater acute conversion factors will apply. The saltwater conversion factors are presented in Table 3 below. Saltwater simulation tests were not completed for mercury or silver, therefore the conversion factors from the Metals Policy will continue to apply.

Table 3.--Saltwater Criteria Conversion Factors for Dissolved Metals

Metal	Conversion factors <SUP>a
Arsenic	1.000
Cadmium	0.994
Chromium (III)	(<SUP>d)
Chromium (VI)	0.993
Copper	0.83
Lead	0.951
Mercury	<SUP>b <SUP>c 0.85
Nickel	0.990
Selenium	0.998
Silver	<SUP>b 0.85
Zinc	0.946

<SUP>a Conversion factors on this table were calculated for acute criteria only. Conversion factors for chronic criteria are not currently available. In the absence of chronic conversion factors saltwater

acute conversion factors are used.

<SUP>b Conversion factor from: Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1, 1993. Factors were expressed to two decimal places.

<SUP>c CCC for mercury cannot be converted to dissolved, because it is based on mercury residues in aquatic organisms rather than toxicity.

<SUP>d No saltwater criteria.

D. Applicability Requirements for Metals Criteria

Through today's action, EPA is also requesting comments on the applicability requirements in 40 CFR 131.36(c) as they apply to the metals criteria. In particular, EPA is requesting comments on Sec. 131.36(c)(4)(i) regarding the calculation of hardness-dependent freshwater metals criteria. Section 131.36(c)(4)(i) describes the minimum and maximum hardness values (25 mg/L and 400 mg/L as CaCO<INF>3, respectively) to be used when calculating hardnessdependent freshwater metals criteria. This requirement is not changed by today's interim final rule, however EPA is requesting comment on an alternative approach. Most of the data used to develop these hardness formulas were in the hardness range of 25 mg/L to 400 mg/L as CaCO<INF>3. The formulas are therefore most accurate in this range. Using a hardness of 25 mg/L for calculating criteria, when the actual ambient hardness is less than 25 mg/L, could result in criteria that are under-protective of aquatic life. EPA is therefore requesting comments on the use of the actual ambient hardness for calculating criteria when the hardness is below 25 mg/L as CaCO<INF>3.

Most freshwaters of the U.S. have an ambient hardness of less than 400 mg/L as CaCO<INF>3. Using 400 mg/L to calculate criteria, for waters with an ambient hardness of greater than 400 mg/L, may result in over-protective criteria because at a hardness above 400 mg/L, other confounding factors, which may cause this hardness, can also affect the toxicity. EPA is requesting comment on an approach that would make two options available for calculating metals criteria for waters with a hardness of greater than 400 mg/L as CaCO<INF>3: Option 1--use 400 mg/L as CaCO<INF>3 for the criteria calculation or, Option 2--use the actual hardness and require the use of the water-effect ratio to modify the final criteria value to more accurately reflect ambient conditions. (EPA notes that in the NTR States, the use of the water-effect ratio is assigned a value of 1.0, unless otherwise specified by the permitting authority. See 40 CFR 131.36(c)(4)(iii).) [[Page 22232]]

E. Calculation of Dissolved Metals Criteria

Metals criteria values in 40 CFR 131.36(b)(1), as amended today, are now shown as dissolved metal. These criteria have been calculated in one of two ways. For freshwater metals criteria that are hardnessdependent (denoted by footnote ``e'' in the matrix), the dissolved metal criteria value must be calculated separately for each hardness using the ble at Sec. 131.36(b)(2), as amended to . The hardnessdependent

freshwater criteria values presented in the matrix at Sec. 131.36(b)(1) have been calculated using a hardness of 100 mg/L CaCO<INF>3 for comparative purposes only. Saltwater metals criteria and freshwater criteria that are not hardness-dependent (criteria denoted by footnote ``m'' in the matrix) are calculated by taking the total recoverable criteria values (from EPA National Ambient Water Quality Criteria Documents) before rounding, and multiplying them by the appropriate conversion factors from Table 2 or 3 of Section C of this preamble. (The total recoverable criteria values are shown to four figures, where available, because they are intermediate values in the calculation of dissolved metals criteria.) The final dissolved metals criteria values, as they appear in the matrix at Sec. 131.36(b)(1), are rounded to two significant figures. Tables 4a and 4b below, summarize the conversions for saltwater criteria and freshwater criteria that are not hardness-dependent.

EPA notes that if a non-NTR State adopts standards, or an NTR State adopts its own standards (for subsequent withdrawal from the NTR), it may prefer a more conservative approach and adopt total recoverable metals criteria. In doing so, the State may use EPA's total recoverable criteria from Tables 4a and 4b (rounded to two significant figures) or, for hardness-dependent freshwater criteria, omit the conversion factor from the formula presented in Sec. 131.36(b)(2).

Tables 4a and 4b use the following abbreviations and formulas for calculating dissolved metals criteria (CMC and CCC are defined in 40 CFR 131.36(b)(1), footnote d):

CMC--Criterion Maximum Concentration
CCC--Criterion Continuous Concentration
CF--Conversion Factor

Formulas for Calculating Dissolved Metals Criteria:

CMC<INF>dissolved = CMC<INF>total recoverable x Acute CF
CCC<INF>dissolved = CCC<INF>total recoverable x Chronic CF

Table 4a.--Calculation of Freshwater Dissolved Metals Criteria That are Not Hardness-Dependent

M	Total Recoverable Metals Criteria \1\ (<greek-m>g/L)		Conversion factors \2\		Dissolved metals criteria \3\	
	CMC	CCC	Acute	Chronic	CMC	CCC

Arsenic	359.1	188.9	1.000	1.000	360	190
Chromium(VI)	15.74	10.80	0.982	0.962	15	10
Mercury	2.428	0.0122	0.85	N/A	2.1	N/A

\1\ From EPA National Ambient Water Quality Criteria Documents.
\2\ From Table 2.
\3\ Final dissolved metals criteria have been rounded to two significant figures.

Table 4b.--Calculation of Saltwater Dissolved Metals Criteria

Metal	Total recoverable metals criteria \1\ (<greek-m>g/L)		Conversion factors \2\		Dissolved metals criteria \3\	
	CMC	CCC	Acute	Chronic	CMC	CCC
Arsenic	68.55	36.05	1.000	1.000	69	36
Cadmium	42.54	9.345	0.994	0.994	42	9.3
Chromium (III)	N/A\4\	N/A\4\	N/A\4\	N/A\4\	N/A\4\	N/A\4\
Chromium (VI)	1079	49.86	0.993	0.993	1100	50
Copper	2.916	2.916	0.83	0.83	2.4	2.4
Lead	217.16	8.468	0.951	0.951	210	8.1
Mercury	2.062	.0250	0.85	N/A\5\	1.8	N/A\5\
Nickel	74.60	8.293	0.990	0.990	74	8.2
Selenium	293.8	70.69	0.998	0.998	290	71
Silver	2.3	N/A\4\	0.85	N/A\4\	1.9	N/A\4\
Zinc	95.10	86.14	0.946	0.946	90	81

\1\ From EPA National Ambient Water Quality Criteria Documents.
\2\ From Table 3.
\3\ Final dissolved metals criteria have been rounded to two significant figures.
\4\ Not applicable, national criteria not available.
\5\ The CCC for mercury is expressed as total recoverable.

F. Site-Specific Criteria Modifications

EPA has issued guidance (Water Quality Standards Handbook, Second Edition-1993, EPA-823-B-93-002 and update #1, EPA-823-B-94-006, August 1994, at page 3-38 and Appendix L), describing three site-specific criteria development methodologies: recalculation procedure, indicator species procedure (also known as the water-effect ratio (WER)) and resident species procedure. Only the first two of these have been widely used.

In the NTR, EPA identified the WER as the method for optional sitespecific criteria development for certain metals. On February 22, 1994, EPA issued Interim Guidance on the Determination and Use of WaterEffect

Ratios for Metals, EPA 823-B-94-001, now incorporated into the updated Second Edition of the Water Quality Standards Handbook, Appendix L. In accordance with the WER guidance and where application of the WER is deemed [[Page 22233]] appropriate, EPA strongly encourages the application of the WER on a watershed or waterbody basis as opposed to application on a discharger-by-discharger basis. This approach is technically sound, an efficient use of resources, and allowable for permitting authorities under the NTR.

EPA's endorsement of the use of the WER is not affected by today's rule. As noted in the NTR at 57 FR 60879, the WER is a more comprehensive mechanism for addressing bioavailability issues than simply expressing the criteria in terms of dissolved metal. Consequently, expressing the criteria in terms of dissolved metal, as done in today's rule, does not completely eliminate the utility of the WER. This is particularly true for copper, a metal that forms reducedtoxicity complexes with dissolved organic matter.

The Interim Guidance on Determination and Use of Water-Effect Ratios for Metals, Appendix D, explains the relationship between WERs for dissolved criteria, and WERs for total recoverable criteria. Dissolved measurements are to be used in the site-specific toxicity testing underlying the WERs for dissolved criteria. Because WERs for dissolved criteria generally are little affected by elevated particulate concentrations, EPA expects those WERs to be somewhat less than WERs for total recoverable criteria in such situations. Nevertheless, after the site-specific ratio of dissolved to total metal has been taken into account, EPA expects a permit limit derived using a WER for a dissolved criterion to be similar to the permit limit that would be derived from the WER for the corresponding total recoverable criterion.

Because WERs for dissolved criteria generally are little affected by particulate concentrations, those WERS also may often exhibit less time variability than WERs for total recoverable criteria. Consequently, WER-adjusted dissolved criteria may have somewhat greater certainty than WER-adjusted total recoverable criteria.

EPA expects the use of WERs for dissolved criteria to provide the same level of protection as the use of WERs for total recoverable criteria in the NTR. However, the increased reliability of the dissolved criteria prior to WER adjustment (compared to the total recoverable criteria unadjusted) will reduce the need for site-specific WER determinations.

G. Technic Guidance

EPA continues to urge the States affected by this rule to adopt their own standards and negate the need for Federal action. Should a State choose to adopt dissolved criteria, EPA recommends use of the Metals Policy, its attachments (as updated herein) and other guidance referenced in this preamble for implementation of dissolved metals criteria. Attachments to the Metals Policy include: guidance on dynamic modeling and translators (Attachment #3), and clean analytical techniques and monitoring (Attachment #4). Additional guidance on clean and ultra-clean techniques is available and under development (see discussion below). EPA will continue to update implementation guidance as needed in the future.

Total Maximum Daily Loads (TMDLs) and National Pollutant Discharge Elimination System (NPDES) Permits

EPA's NPDES regulations require that limits for metals in permits be stated as total recoverable in most cases {see 40 CFR Sec. 122.45(c)} except when an effluent guideline specifies the limitation in another form of the metal, the approved analytical methods measure only dissolved metal, or the permit writer expresses a metal's limit in another form (e.g., dissolved, specific valence, or total) when required to carry out provisions of the Clean Water Act. This is because the chemical conditions in ambient waters frequently differ substantially from those in the effluent and there is no assurance that effluent particulate metal would not dissolve after discharge. The NPDES permit regulations do not require that State water quality standards be expressed as total recoverable; rather, the regulations require permit writers to develop permit limits that are expressed in terms of metals concentrations and loadings that are measured using the total recoverable method. Expressing criteria as dissolved metal requires translation between different metal forms in the calculation of the permit limit so that a total recoverable permit limit can be established that will achieve water quality standards. Both the TMDL and NPDES permit use of water quality criteria in NTR States now require the ability to translate between dissolved metal in ambient waters and total recoverable metal in effluents. In addition to the guidance on dynamic modeling and translators attached to the Metals Policy, EPA's Interim Guidance on the Determination and Use of WaterEffect Ratios for Metals, February 1994, EPA 823-B-94-001 , Pages 116

and 128-130), presents an effluent-specific approach for calculating a total recoverable metal permit limit from a dissolved metal criterion. EPA is expecting to complete additional guidance on translators in 1995.

2. Monitoring

a. Use of Clean Sampling and Analytical Techniques

In assessing waterbodies to determine the potential for toxicity problems due to metals, the quality of the data used is an important issue. Depending on the concentration of metal present, the use of ``clean'' and ``ultra-clean'' techniques for sampling and analysis may be critical to accurate data for implementation of aquatic life criteria for metals.

``Clean'' techniques refer to those requirements (or practices for sample collection and handling) necessary to produce reliable analytical data in the microgram per liter (<greek-m>g/L) or part per billion (ppb) range. ``Ultra-clean'' techniques refer to those requirements or practices necessary to produce reliable analytical data in the nanogram per liter (ng/L) or part per trillion (ppt) range. Because typical concentrations of metals in surface waters and effluents vary from one metal to another, the effect of contamination on the quality of metals monitoring data varies appreciably.

EPA has developed protocols on the use of clean techniques in coordination with the United States Geological Survey (USGS). The guidance, entitled Method 1669: Sampling Ambient Water for Determination of Trace Metals at EPA Water Quality Criteria Levels is available from the Office of Water Resource Center as part of the Trace Metals Package. Draft protocols for ultra-clean techniques will be available in late calendar year 1995.

H. Saltwater Copper Criteria

The saltwater copper criteria in today's interim final rule are 2.4 <greek-m>g/L dissolved copper for both CMC and CCC based on conversion of 2.9 <greek-m>g/L for both the CMC and CCC from total recoverable to dissolved metal. New data collected from a study for the New York/New Jersey Harbor indicate the potential need to revise the copper criteria document t reflect a change in the saltwater CMC a CCC aquatic life

values. A comprehensive literature search was conducted and toxicity test data for seven new species were added to the database for the saltwater copper criteria. EPA believes these new data have national implications and indicate the national criteria may be more accurate at a CMC of 4.8 <greek-m>g/L dissolved and a CCC of 3.1 <greek-m>g/L dissolved. In today's rulemaking, EPA is noticing the availability of data to support these [[Page 22234]] potential changes in the national saltwater copper criteria and solicits comments. The data can be found in the draft document entitled, Ambient Water Quality Criteria--Copper, Addendum 1995. This document is available from the Office of Water Resource Center or Water Docket. Based on those comments, the saltwater copper criteria in this interim final rule may be revised in the final rule to reflect these new data.

I. Procedural Requirements

Section 553 of the Administrative Procedure Act provides that when an agency, for good cause, finds that notice and public procedure are impracticable, unnecessary or contrary to the public interest, it may first issue a rule without providing notice and an opportunity to comment. EPA has concluded that there is good cause to issue this interim final rule without notice and comment and to make the rule effective immediately.

In 1987, Congress amended the Clean Water Act to provide that States must adopt numeric criteria to control the discharge of toxic pollutants. Before this requirement was enacted, few States had adopted numeric criteria for toxic pollutants and had to rely on ``narrative'' criteria (e.g., ``free from toxics in toxic amounts'') to set discharge limits for such pollutants. Congress, expressing concern over the calculation of discharge limitations for toxics without numeric criteria, required States to adopt numeric, pollutant-specific criteria for toxic pollutants (56 FR 58423-58424, Nov. 19, 1991).

Following promulgation of the NTR, EPA continued to evaluate available information on metals. EPA held a public meeting of experts in which a recommendation was made to express the ambient water criteria as dissolved metal. This recommendation and others, were noticed for public comment at 58 FR 32131, June 8, 1993. It is EPA's judgment that aquatic life criteria for metals, when expressed as dissolved metal provide a more accurate measurement of metals bioavailability to organisms in the water column than when expressed as total recoverable metal. Thus, in some situations, a total

recoverable metals criteria in the NTR may result in permit limits that are more stringent than if the criteria were expressed in a dissolved form. As a result, in these situations, permitting authorities in the NTR States may be imposing more stringent (and potentially more costly) effluent limitations on their dischargers than will be required to meet the new dissolved metals aquatic life criteria put in place today.

EPA considered the impacts of a stay of the current metals criteria while it undertook a standard rulemaking (i.e., proposed rule followed by a final) to revise the aquatic life metals criteria to express them in a dissolved form. However, during the effective period of the stay (the interim between proposal and final rule), permitting authorities for the NTR States would generally need to use the States' narrative criteria (e.g., free from toxics in toxic amounts) to develop permit limits for the discharge of toxics. Because the Congressional directive is clear that States must have numeric criteria for toxic pollutants, EPA rejected this approach in favor of an interim final rule.

By today's action the Agency upholds the intent of Sec. 303(c)(2)(B) of the Clean Water Act and avoids the need for permitting authorities to rely on narrative criteria to develop permit limits. Further, this interim final rule is a temporary measure. The Agency notes that considerable public comment has already been obtained on the Metals Policy and the specific criteria being issued in this interim final rule. EPA held a meeting with invited experts in January 1993 in Annapolis, Maryland to further elicit comment on the use of dissolved metals for developing national metals criteria. The Agency solicited comments on the recommendations made by presenters at that meeting in the Federal Register on July 9, 1993 (58 FR 32131). The Metals Policy issued in October 1993 has received wide-spread distribution and informal response from many interested parties. In August 1994, EPA issued a Federal Register notice indicating that the Agency was considering the use of the Metals Policy to develop metals criteria in the Great Lakes Initiative (59 FR 44678, August 30, 1994) and comments were received on this issue. Today's action has the additional benefit of the comments received from the August 1994 notice on the Great Lakes Initiative.

EPA therefore concludes that public comment on this interim measure is unnecessary because ample comment has already been received on the numeric dissolved metals criteria and additional comment is being solicited and will be considered before a final rule is issued. Further, a public comment process before adopting the new metals criteria is contrary to the public interest because: 1) the current metals criteria place a potentially unnecessary regulatory burden on dischargers in the States covered by this rule, without necessarily

providing additional protection to aquatic life in the water column and 2) it is in the public interest for the States to have numeric criteria protective of aquatic life.

Because of the potential adverse effect on public interest noted above, the Agency has determined there is good cause for making this regulation effective immediately.

J. Regulatory Assessment Requirements

Unfunded Mandates Reform Act of 1995

Section 201 of the Unfunded Mandates Reform Act of 1995 (``Unfunded Mandates Act''), signed into law on March 22, 1995, requires each Agency, unless prohibited by law, to assess the effects of Federal regulation on State, local and tribal governments and the private sector under section 202 of the Act. EPA must prepare a written statement to accompany any rules where the estimated costs to State, local and tribal governments, in the aggregate, or to the private sector will be $100 million or more in any one year. Under section 205, for rules that require a written statement under section 202, EPA must select the most cost-effective and least burdensome alternative that achieves the objective of such a rule and that is consistent with statutory requirements. Also, for such rules, section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly and uniquely affected by the rule.

EPA estimates that the costs to State, local, and tribal governments, or to the private sector, from today's interim final rule will not be $100 million or more. EPA has determined that this rule should reduce current regulatory requirements imposed by the NTR. By promulgating the metals criteria in the NTR as dissolved metals, rather than total recoverable, EPA is reducing potential costs to discharge permittees and other parties subject to the water quality criteria. Therefore, an unfunded mandates statement pursuant to section 202 is not necessary.

While an unfunded mandates statement is not necessary for this rule, EPA notes that it has previously considered the costs and benefits of promulgating Federal water quality criteria when the Agency issued the NTR in 1992. See 57 FR 60903-60909 (December 22, 1992). That analysis would continue to be relevant with respect to this issue of costs and benefits arising from Federal promulgation of criteria for

states. Of course, to the extent today's interim final rule is putting in place less burdensome [[Page 22235]] requirements than the 1992 rule, the Agency is reducing any potential costs. It is important to note that the Federal criteria in today's rule, as the Federal criteria in the 1992 rule, only impose requirements until the States adopt, and EPA approves, criteria meeting the requirements of section 303(c)(2)(B) of the Clean Water Act. EPA continues to work with the States to assist them in adopting their own criteria thereby enabling EPA to withdraw the Federal criteria.

While section 205 of the Unfunded Mandates Act is not applicable to today's rule because the rule does not require a written statement under section 202, the Agency does believe that today's rule is consistent with the intent of section 205. Section 205 directs agencies to consider regulatory alternatives and to select the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. EPA's decision to promulgate metals criteria expressed as dissolved rather than total recoverable represents the Agency's selection of the least costly, most cost-effective and least burdensome alternative for setting metals criteria. The Agency addressed this issue in detail in the development of the Great Lakes Water Quality Guidance, promulgated on March 13, 1995 (60 FR 15366, March 23, 1995). For today's rule the Agency was obligated pursuant to section 303 to promulgate water quality criteria for states not in compliance with section 303(c)(2)(B). Today's rule achieves that objective consistent with the intent of section 205.

Finally, because today's rule relieves a regulatory requirement, EPA does not believe that the rule will establish requirements that might significantly or uniquely affect small governments within the meaning of section 203. However, the Agency is committed to working with affected small governments by providing notice of requirements that might potentially affect them, enable them to provide meaningful and timely input, and to inform, educate and advise small governments on compliance with any requirements. With respect to today's interim final rule, representatives of State and local governments participated in the development of, and provided comments to the Office of Water's current metals policy. The Agency recognizes the importance of soliciting the input of small governments and will be available to work with them to address any issues related to compliance with today's rule.

2. Executive Order 12866

Under Executive Order 12866 (56 FR 51735, October 4, 1993), the Agency must determine whether the regulatory action is ``significant'' and therefore subject to all the requirements of the Executive Order (i.e., Regulatory Impact Analysis and review by the Office of Management and Budget). Under section 3(f), the order defines ``significant'' as those actions likely to lead to a rule: (1) Having an annual effect on the economy of $100 million or more, or adversely and materially affecting a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities (also known as ``economically significant''); (2) creating serious inconsistency or otherwise interfering with an action taken or planned by another agency; (3) materially altering the budgetary impacts of entitlements, grants, user fees, or loan programs; or (4) raising novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this order. Pursuant to the terms of this order, EPA has determined that this interim final rule would not be ``significant''.

3. Presidential Review of the Code of Federal Regulations

On February 22, 1995, President Clinton announced a review of the Code of Federal Regulations by all Federal agencies. The objective of the review is to: eliminate obsolete regulations, withdraw outdated or superseded regulations, propose modifications to simplify or reduce burden, and to identify legislation for needed change. Today's rule, revising the NTR, is consistent with the review announced by the President. EPA has reviewed the NTR (40 CFR 131.36) and determined that the use of dissolved metals criteria in the NTR States, for the metals listed in this rule, should reduce potential regulatory burden.

4. Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601, et seq., Pub. L. 96-354) requires EPA to assess whether its regulations create a disproportionate effect on small entities. EPA discussed in the NTR rulemaking (December 22, 1992, 57 FR 60909), the potential effects of the rulemaking on small entities. The Agency concluded that the

rulemaking would not result in a significant impact on small entities and a final regulatory flexibility analysis was not required.

Because the potential impact on small entities as a result of this interim final rule revision will be less burdensome on small entities than the original rule, EPA, based on the same factors discussed in the previous final rulemaking, continues to conclude this action will not result in a significant impact on small entities.

5. Paperwork Reduction Act

This interim final rule places no information collection activities on the affected States and therefore no information collection requirement will be submitted to the Office of Management and Budget for review in compliance with the Paperwork Reduction Act, 44 U.S.C. 3501 et seq.

List of Subjects in 40 CFR Part 131

Environmental Protection, Water pollution control, Water quality standards, Toxic pollutants.

Dated: April 14, 1995.
Carol Browner,
Administrator.

For the reasons set out in the preamble, title 40, chapter I part 131 of the Code of Federal Regulations is amended as follows:

PART 131-WATER QUALITY STANDARDS

The authority citation for part 131 continues to read as follows:

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

2. Section 131.36 is amended by revising entries 2, 4, 5a,5b,6,7,8,9,10,11, and 13 of the table at paragraph (b)(1), revising footnotes ``e'' and ``l'' adding footnotes ``o'' and ``p'' to the table in paragraph (b)(1), removing the ``Note to paragraph (b)(1)'', revising paragraph (b)(2) and by revising the first two sentences of paragraph (c)(4)(iii) to read as follows:

Sec. 131.36 Toxics criteria for those States not complying with Clean Water Act Section 303(c)(2)(B).

* * * *

(b)(1) EPA's Section 304(a) Criteria for Priority Toxic Pollutants.

A		B		C		D	
		Freshwater		Saltwater		Human health (10<SUP>-6 risk for carcinogens)	
		Criteria	Criteria	Criteria	Criteria	For consumption of:	
(#) Compound	CAS N.	Maximum	Continuous	Maximum	Continuous	Water & Organisms (ug/L) D1	Organisms only (ug/L) D2
		Conc.<SUP>d (ug/L) B1	Conc.<SUP>d (ug/L) B2	Conc.<SUP>d (ug/L) C1	Conc.<SUP>d (ug/L) C2	Conc.<SUP>d (ug/	
*							
2 Arsenic.....	7440382	<SUP>m 360	<SUP>m 190	<SUP>m 69		<SUP>m 36 a,b,c	<SUP>a,b,c0.018 <SUP>a,b,c 0.14
*							
4 Cadmium.....	7440439	<SUP>e 3.7	<SUP>e 1.0	<SUP>m 42		<SUP>m 9.3	(<SUP>n) (<SUP>n)
5a Chromium (I? ...	16065831	<SUP>e 550	<SUP>e 180	<SUP>		<SUP>.....	(<SUP>n) (<SUP>n
b Chromium (VI) ...	18540299	<SUP>m 15	<SUP>m 10	><SUP>m 1100		<SUP>m 50	(<SUP>n) (<SUP>n,

6 Copper.....	7440508	17 <SUP>e	11 <SUP>e	<SUP>m 2.4	<SUP>m <SUP>2.4	<SUP>..<SUP>.....	<SUP>..<SUP>.....	
7 Lead.....	7439921	<SUP>e 65	<SUP>e 2.5	<SUP>m 210	<SUP>m 8.1	(<SUP>n)	(<SUP>n)	
8 Mercury.....	7439976	<SUP>m 2.1	<SUP>i,p 0.012	<SUP>m 1.8	<SUP>i,p 0.025	0.14	0.15	
9 Nickel.....	7440020	<SUP>e 1400	<SUP>e 160	<SUP>m 74	<SUP>m 8.2	<SUP>a 610	<SUP>a 4600	
10 Selenium.....	7782492	<SUP>p 20	<SUP>p 5.0	<SUP>m 290	<SUP>m 71	(<SUP>n)	(<SUP>n)	
11 Silver.....	7440224	<SUP>e 3.4	<SUP>m 1.9					
13 Zinc.....	7440666	<SUP>e 110	<SUP>e 100	<SUP>m 90	<SUP>m 81			

Footnotes:

a. Criteria revised to reflect current agency q<INF>1* or RfD, as contained in the Integrated Risk Information System (IRIS). The fish tissue bioconcentration factor (BCF) from the 1980 criteria documents was retained in all cases.

b. The criteria refers to the inorganic form only.

c. Criteria in the matrix based on carcinogenicity (10<SUP>-6 risk). For a risk level of 10<SUP>-5, move the decimal point in the matrix value one place to the right.

d. Criteria Maximum Concentration (CMC) = the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (1-hour average) without deleterious effects. Criteria Continuous Concentration (CCC) = the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. ug/L = micrograms per liter

e. Freshwater aquatic life criteria for these metals are expressed as a function of total hardness (mg/L as CaC0<INF>3), the pollutant's water effect ratio (WER) as defined in Sec. 131.36(c) and multiplied by an appropriate dissolved conversion factor as defined in Sec. 131.36(b)(2). For comparative purposes, the values displayed in this matrix are shown as dissolved metal and correspond to a total hardness of 100 mg/L and a water effect ratio of 1.0.

i. If the CCC for total mercury exceeds 0.012 ug/l more than once in a 3-year period in the ambient water, the edible portion of aquatic species of concern must be analyzed to determine whether the concentration of methyl mercury exceeds the FDA action level (1.0 mg/kg). If the FDA action level is exceeded, the State must notify the appropriate EPA Regional Administrator, initiate a revision of its mercury criterion in its water quality standards so as to protect designated uses, and take other appropriate action such as issuance of a fish consumption advisory for the affected area.

l. [Reserved: this letter not used as a footnote].

m. Criteria fo[illegible]ese metals are expressed as a function of the water effect [illegible]b, WER, as defined in 40 CFR

131.36 (c).

CMC=column B1 or C1 value x WER
CCC=column B2 or C2 value x WER

n. EPA is not promulgating human health criteria for this contaminant. However, permit authorities should address this contaminant in NPDES permit actions using the State's existing narrative criteria for toxics.

o. [Reserved: This letter not used as a footnote].
p. Criterion expressed as total recoverable.

*

(2) Factors for Calculating Hardness-Dependent, Freshwater Metals Criteria

CMC=WER exp {m<INF>A[ln(hardness)]+b<INF>A} x Acute Conversion Factor
CCC=WER exp {m<INF>C[ln(hardness)]+b<INF>C} x Chronic Conversion Factor
Final CMC and CCC values should be rounded to two significant figures.

Metal	m<INF>A	b<INF>A	m<INF>C	b<INF>C	Freshwater conversion factors	
					Acute	Chronic
Cadmium	1.128	-3.828	0.7852	-3.490	<SUP>a <SUP>0.944	<SUP>a <SUP>0.909
Chromium (III)	0.8190	3.688	0.8190	1.561	0.316	0.860
Copper	0.9422	-1.464	0.8545	-1.465	0.960	0.960
Lead	1.273	-1.460	1.273	-4.705	<SUP>a 0.791	<INF>a 0.791
Nickel	0.8460	3.3612	0.8460	1.1645	0.998	0.997
Silver	1.72	-6.52	<SUP>b N/A	<SUP>b N/A	0.85	<SUP>bN/A
Zinc	0.8473	0.8604	0.8473	0.7614	0.978	0.986

Note to table: The term ``exp'' represents the base e exponential function.
Footnotes to table:

<SUP>a The freshwater conversion factors (CF) for cadmium and lead are hardness-dependent and can be calculated for any hardness [see limitations in Sec. 131.36(c)(4)] using the following equations:

Cadmium
Acute: CF=1.136672--[(ln hardness)(0.041838)]
Chronic: CF=1.101672--[(ln hardness)(0.041838)]
Lead (Acute and Chronic): CF = 1.46203--[(ln hardness)(0.145712)]

<SUP>b No chronic criteria are available for silver.

(c) * * *

(iii) Except where otherwise noted, the criteria for metals (compounds #2, #4-# 11, and #13, in paragraph (b) of this section) are expressed as dissolved metal. For purposes of calculating aquatic life criteria for metals from the equations in footnote m. in the criteria matrix in paragraph (b)(1) of this section and the equations in paragraphs (b)(2) of this section, the water-effect ratio is computed as a specific pollutant's acute or chronic toxicity values measured in water from the site covered by the standard, divided by the respective acute or chronic toxicity value in laboratory dilution water. * * *

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