

effect for CWA purposes unless superseded by replacement Federal water quality standards (see 40 CFR 131.21(c)). However, under the new regulation, State or authorized Tribal water quality criteria adopted into State or Tribal law or regulation on or after May 30, 2000, are in effect for CWA purposes only after EPA approves any new or revised water quality standards. Therefore, new or revised water quality criteria adopted by States or authorized Tribes would not take effect for CWA purposes until after EPA approves them.

## II. Human Health Water Quality Criteria Revisions

### A. What Are the Criteria Revisions?

Today, EPA is announcing the availability of national recommended water quality criteria for the protection of human health for the following fifteen pollutants: Chlorobenzene; cyanide; 1,2-dichlorobenzene; 1,4-dichlorobenzene; 1,1-dichloroethylene; 1,3-dichloropropene; endrin; ethylbenzene;

hexachlorocyclopentadiene; lindane; thallium; toluene; 1,2-transdichloroethylene; 1,2,4-trichlorobenzene; and vinyl chloride. The updated criteria are based on EPA's new methodology for deriving human health water quality criteria (i.e., the 2000 Human Health Methodology), and they supercede criteria previously published by the Agency.

These criteria represent partial updates of the section 304(a) water quality criteria, as described in both the draft Methodology revisions and the **Federal Register** notice that accompanied the final Methodology (65 FR 66444; November 3, 2000). EPA believes that updating a limited number of components for which there are available data or improved science (i.e., a partial update) is a reasonable and efficient way to more frequently publish revised section 304(a) water quality criteria. EPA has also described its process for publishing revised criteria [see *National Recommended Water Quality Criteria—Correction* (64 FR 19781; or EPA 822-Z-99-001) or the

**Federal Register** notice for the final Methodology (65 FR 66444)].

Because recalculation of these fifteen criteria resulted in significant changes, EPA issued a **Federal Register** notice soliciting scientific views on the criteria on December 27, 2002 (67 FR 79091). This **Federal Register** Notice was issued in accordance with the published process for revising section 304(a) water quality criteria. EPA considered the scientific views received in response to the December 27, 2002, **Federal Register** notice. All criteria concentrations in this Notice are the same as those published in the December 27, 2002 (67 FR 79091), with the exception of the criterion for protecting human health from consumption of organism only for cyanide. (See section B, response to Scientific view b, Incidental ingestion should be considered when deriving human health water quality criteria for toxic pollutants with a low BCF.) Table II-1 presents the updated criteria, as well as the components used in their derivation (e.g., bioconcentration factor, relative source contribution).

TABLE II-1.—REVISED HUMAN HEALTH WATER QUALITY CRITERIA

Priority pollutant	CAS No.	Human health water quality criteria for consumption of:		Components
		Water + organism (ug/L)	Organism only (ug/L)	
Thallium .....	7440280	0.24	0.47	RfD = 6.8E-5, BCF = 116 (RfD listed is for thallium (I) sulfate 7446-18-6), RSC = 20%, FI = 17.5.
Cyanide .....	57125	140	*140	RfD = 2E-2, BCF = 1, RSC = 20%, FI = 17.5.
Chlorobenzene .....	108907	130	1,600	RfD = 2E-2, BCF = 10.3, RSC = 20%, FI = 17.5.
1,1-Dichloroethylene .....	75354	330	7,100	RfD = 5E-2, RSC = 20%, BCF = 5.6, FI = 17.5.
1,3-Dichloropropene .....	542756	0.34	21	*q1 = 0.1, BCF = 1.9, FI = 17.5.
Ethylbenzene .....	100414	530	2,100	RfD = 1E-1, BCF = 37.5, RSC = 20%, FI = 17.5.
Toluene .....	108883	1,300	15,000	RfD = 2E-1, BCF = 10.7, RSC = 20%, FI = 17.5.
1,2-Trans-Dichloro-ethylene .....	156605	140	10,000	RfD = 2E-2, BCF = 1.58, RSC = 20%, FI = 17.5.
Vinyl Chloride .....	75014	0.025	2.4	*q1 = 1.4 (LMS exposure from birth), BCF = 1.17, FI = 17.5.
1,2-Dichlorobenzene .....	95501	420	1,300	RfD = 9E-2, BCF = 55.6, RSC = 20%, FI = 17.5.
1,4-Dichlorobenzene .....	106467	63	190	ADI = 1.34E-2, (ADI for 1,2-DCB used), BCF = 55.6, RSC = 20%, FI = 17.5.
Hexachlorocyclo-pentadiene .....	77474	40	1,100	RfD = 6E-3, BCF = 4.34, RSC = 20%, FI = 17.5.
1,2,4-Trichloro-benzene .....	120821	35	70	RfD = 1E-2, BCF = 114, RSC = 20 %, FI = 17.5.
gamma-BHC (Lindane) .....	58899	0.98	1.8	RfD= 3E-4, BCF = 130, RSC= 20%, FI = 17.5.
Endrin .....	72208	0.059	0.060	RfD = 3E-4, BCF = 3970, RSC = 20%, FI = 17.5.

RfD = reference dose; q1\* = cancer potency factor; ADI = allowable daily intake; BCF = bioconcentration factor; RSC = relative source contribution; FI = fish intake

\*This recommended water quality criterion is expressed as total cyanide, even though the IRIS RfD we used to derive the criterion is based on free cyanide. The multiple forms of cyanide that are present in ambient water have significant differences in toxicity due to their differing abilities to liberate the CN-moiety. Some complex cyanides require even more extreme condition than refluxing with sulfuric acid to liberate the CN-moiety. Thus, these complex cyanides are expected to have little or no 'bioavailability' to humans. If a substantial fraction of the cyanide present in a water body is present in a complexed form (e.g.,  $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ ), this recommended criterion may be over conservative.

EPA received much support for revising criteria based on partially updated components of the criteria equations as a way of increasing the frequency of scientific improvements to the nationally recommended criteria. For EPA to consider a water quality criterion revision based on a partial

update to be acceptable, the components being used in the update should be comprehensive (e.g., a revised reference dose or cancer dose-response assessment), stand alone, and be based on new national or local data. The recalculation of all fifteen water quality criteria integrates the updated national

default freshwater/estuarine fish consumption rate of 17.5 grams/day. Thirteen of the criteria were calculated using a previously-determined relative source contribution (RSC) value from the national primary drinking water standards for the same chemicals. EPA also incorporated into the recalculations