



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

JUN 29 2011

Ms. L'Oreal Stepney, P.E., Deputy Director
Office of Water (MC-158)
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Dear Ms. Stepney:

The Environmental Protection Agency (EPA or Agency) has completed its review of half of the new and revised provisions in the *Texas Surface Water Quality Standards* (Texas WQS). These standards were adopted by the Texas Commission on Environmental Quality (TCEQ), on June 30, 2010, and received by EPA for approval on August 9, 2010. I am pleased to inform you that the EPA is approving the provisions as documented in Parts I and II of the enclosure to this letter, pursuant to section 303(c) of the Clean Water Act (CWA) and the implementing regulation at 40 CFR Part 131. This action includes new and revised provisions in §307.1; §307.2; §307.3; §307.4; §307.5; §307.6; §307.7; §307.9; and, Appendices A, B, C, D and G of the Texas WQS, as specified in the enclosure. EPA is disapproving the human health criterion for mercury in §307.6(d) – Table 2, and the portion of the revised provision at §307.9(e)(3) related to the high-flow exemption for bacteria criteria, as discussed below and documented in Part III of the enclosure to this letter.

EPA is taking no action on the revised definition of “Surface water in the state” in §307.3(a)(66), which previously included an area 10.36 miles off-shore into the Gulf of Mexico. The revised definition replaces “from the mean high water mark (MHWM) out 10.36 miles into the Gulf” with a reference to §26.001 of the Texas Water Code, but the intent of the provision has not changed. Under the CWA, Texas does not have jurisdiction to establish water quality standards more than three nautical miles from the coast. Therefore, EPA’s approval action on the items in Parts I and II of the enclosure recognizes the state’s authority under the CWA to include waters extending offshore three nautical miles in the Gulf of Mexico, but does not extend past that point. In addition, EPA’s approval action also does not include the application of the Texas WQS to the portions of the Red River and Lake Texoma that are located within the state of Oklahoma. EPA is also taking no action on the Texas WQS for those waters or portions of waters located in Indian Country.

As noted in Part II of the enclosure, EPA is approving the revised aquatic life uses and dissolved oxygen criteria for 16 unclassified water bodies in Appendix D, subject to the outcome of consultation with the U.S. Fish and Wildlife Service under Section 7(a)(2) of the Endangered Species Act. The Agency determined that several revisions in the 2010 Texas WQS are implementation provisions, rather than water quality standards under CWA §303(c), and, therefore are not subject to EPA review. These revisions are identified in Part IV of the enclosure.

Under 40 CFR §131.21(c), new and revised standards do not go into effect for CWA purposes until approved by EPA. Therefore, EPA's disapproval of Texas' revised human health criterion for mercury of 0.7 mg/kg or 700 ug/kg (measured in fish tissue) means that the previously-approved human health criteria for mercury of 0.0122 ug/L (freshwater) and 0.025 ug/L (saltwater) remain effective for CWA purposes. Texas may resolve this disapproval action by adopting a human health criterion equivalent to, or as protective as, EPA's CWA §304(a) mercury human health criterion recommendation of 0.3 mg/kg (measured in fish tissue). As EPA has previously stated, the State has an option to take a dual approach as follows:

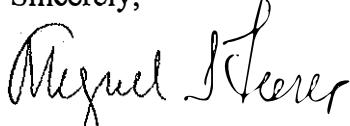
- Adopt a water quality criterion of 0.3 mg/kg or other value that is scientifically defensible and protective of the designated use, in the Texas WQS for implementation in regulatory actions, such as the CWA §303(d) program and wastewater permitting.
- Continue to use a non-regulatory screening level (e.g., 0.7 mg/kg fish tissue) to trigger a risk assessment for determining the need for fish consumption advisories and bans.

If Texas does not adopt a revised human health criterion for mercury in an expeditious manner, EPA may promulgate the Agency's §304(a) criterion recommendation. EPA requests that TCEQ adopt a protective human health criterion within the next three years. Please provide EPA with a timeline for this action within the next six months.

EPA is disapproving the adoption of a provision exempting water from being assessed for bacterial criteria during high flow events (307.9(e)(3)). The State may resolve this disapproval by removing it from the Texas WQS or by amending the regulation to require that the attainability of the recreational use be assessed and documented, consistent with 40 CFR §131.10(g), when bacteria samples are collected at high flows.

I would like to commend the TCEQ staff for its commitment in completing the task of reviewing and revising the state's water quality standards. EPA will take separate action on the remaining new and revised provisions in §307.4; §307.6; §307.7; §307.8; §307.9; and, Appendices A, C, D, E and F of the Texas WQS. If you have any questions or concerns, please contact me at (214) 665-7101, or have your staff contact Diane Evans at (214) 665-6677.

Sincerely,



Miguel I. Flores
Director
Water Quality Protection Division

Enclosure

cc: Kelly Holligan, Director, TCEQ - Water Quality Planning Division (MC-203)

EPA Review of 2010 Texas Surface Water Quality Standards (Texas WQS)

EPA's action addresses the revisions to water quality standards adopted by the Texas Commission on Environmental Quality (TCEQ) in June 2010 and submitted to EPA in August 2010. This enclosure provides a summary of the revisions and the action taken by EPA. The discussion below covers the three types of actions for specific provisions: I. Revisions that are approved for purposes of Clean Water Act (CWA) §303(c), as found on pages 1-9 of this enclosure); II. Revisions that are approved for purposes of CWA §303(c), subject to completion of consultation under the Endangered Species Act (ESA), as found on page 9-10 of this enclosure; III. Revisions that are disapproved for CWA purposes, as found on pages 10-13 of this enclosure; and, IV. Revisions that are not water quality standards under the CWA

I. REVISIONS THAT EPA IS APPROVING

EPA has concluded that approval of certain revisions either will have no effect on listed or proposed endangered or threatened species, or are otherwise not subject to ESA consultation. For the revisions in this category, ESA consultation is not required. Major revisions in this category are discussed below.

§307.1. General Policy Statement

An editorial change was made under §307.1 to be consistent with the Texas Water Code and is approved.

§307.2. Description of Standards

§307.2(a)(10). Language was modified to reflect the updated contents of the Appendices in §307.10 and is approved. EPA will take separate action on new and revised provisions in Appendices.

§307.2(d)(5). Language was added to allow the use of temporary variances in stormwater permits and is approved. EPA will continue to review individual requests for temporary variances to water quality standards.

Additional editorial changes, which don't alter the intent or implementation of the Texas WQS, were made under §307.2 and are approved.

§307.3. Definitions and Abbreviations

§307.3(a). Definitions. Definitions for the following terms were added to the Texas WQS and are approved:

Aquatic vegetation	Nutrient	Sole-source surface drinking water supply
Commission	Primary contact recreation	
Dry weather flows	Protection zone	Thalweg
Main pool station	Secondary contact recreation 1	Toxic equivalency factor.
Nutrient criteria	Secondary contact recreation 2	Toxic equivalency

The following definitions were modified in the 2010 Texas WQS and are approved:

Criteria	Nonpersistent	Standards implementation procedures
Critical low flow	Persistent	
Designated use	Presumed use	
Noncontact recreation	Standards	

The removal of the definitions for “contact recreation” and “significant aquatic life use” is approved. The definition of “primary contact recreation” replaces the definition for “contact recreation.” Modifications in §307.7(b)(3)(A)(i) – Table 3 replace the definition of “significant aquatic life use,” but do not alter the level of protection for aquatic life and are approved.

§307.3(b). Abbreviations. Abbreviations were added in the triennial revision for the following terms and are approved:

aquatic life use (ALU)	meters per kilometer (m/km)
Assessment Tools for the Evaluation of Risk (ASTER)	method detection limit (MDL)
bioconcentration factor (BCF)	mile (mi)
cubic feet per second (cfs, ft ³ /s)	primary contact recreation (PCR)
county road (CR)	reference dose (RfD)
farm to market road (FM)	ranch road (RR)
Health Effects Assessment Summary Tables (HEAST)	secondary contact recreation (SCR)
International Boundary and Water Commission (IBWC)	state highway (SH)
Integrated Risk Information System (IRIS)	standard units (SU)
kilometer (km)	Texas Commission on Environmental Quality (TCEQ)
minimal aquatic life use (M)	toxic equivalency factor (TEF)
multiplier (m)	toxicity reduction evaluation (TRE)
	United States (US)
	water-effect ratio (WER)

The deletion of the following abbreviations is approved: best management practices (BMP), contact recreation (CR), municipal separate storm sewer system (MS4) and, National Pollutant Discharge Elimination System (NPDES).

Additional editorial changes, which don’t alter the intent or implementation of the Texas WQS, were made in provisions under §307.3 and are approved.

§307.4 General Criteria

§307.4(j)(1) – (2). Aquatic recreation. This subsection was expanded to include the secondary contact recreation 1 and 2 uses, as established in §307.7(b)(1) and is approved. A reference to Appendix G which includes recreation uses for unclassified water bodies was also added. A primary contact recreation use is presumed for all water bodies. For intermittent streams (with or without perennial pools), nontidal wetlands, and unclassified perennial freshwater streams and rivers, a presumed secondary contact recreation1 use may be applied if several characteristics exist, including minimum conditions established in §307.4(j)(2)(B)(i)-(ii).

EPA will take separate action on the provision at §307.4(j)(3). Assigning recreational uses to an unclassified water body.

§307.5. Antidegradation

The term “wildlife” was revised to “terrestrial life” in several subsections and is approved. Several editorial changes, which don’t alter the intent or implementation of the Texas WQS, were made in provisions under §307.5 and are approved.

§307.6. Toxic Materials

§307.6(d). Specific numerical human health criteria. Table 2 – Criteria in Water for Specific Toxic Materials

Human health criteria for the substances listed below were revised or added in the 2010 WQS and are approved. Factors to calculate criteria were also updated as documented in items under paragraph (3).

acrylonitrile	1,2 dibromoethane	hexachloroethane
aldrin	<i>m</i> -dichlorobenzene	hexachlorophene
anthracene	<i>o</i> -dichlorobenzene	lead
antimony	3,3 dichlorobenzidine	methoxychlor
arsenic	1,2 dichloroethane	methyl ethyl ketone
benzene	1,1 dichloroethylene	nickel
benzidine	dichloromethane	nitrobenzene
benzo(a)anthracene	1,2 dichloropropane	nitrosodiethylamine N
benzo(a)pyrene	1,3 dichloropropene	nitrosodibutylamine N
bis (chloromethyl) ether	dicofol	pentachlorobenzene
bis (2-chloroethyl) ether	dieldrin	pentachlorophenol
bis-2-ethylhexylphthalate	2,4 dimethyl phenol	polychlorinated biphenyls
bromodichloromethane	di- <i>n</i> -butyl phthalate	pyridine
bromoform	dioxin/furans	1,2,4,5 tetrachlorobenzene
carbon tetrachloride	endrin	1,1,2,2 tetrachloroethane,
chlordan	ethylbenzene	tetrachloroethylene
chlorobenzene	heptachlor	thallium
chlorodibromomethane	heptachlor epoxide	toluene
chloroform	hexachlorobenzene	toxaphene
chromium (VI)	hexachlorobutadiene	2,4,5-TP (Silvex)
chrysene	hexachlorocyclohexane- alpha	1,1,1 trichloroethane
cresols	hexachlorocyclohexane-beta	1,1,2 trichloroethane
4,4' DDD	hexachlorocyclohexane- gamma	trichloroethylene
4,4' DDE	(Lindane)	2,4,5-trichlorophenol
4,4' DDT	hexachlorocyclopentadiene	total trihalomethanes.
danitol		vinyl chloride

Items (2)(A) and (B) which specify the application of human health criteria for consumption of drinking water, fish and other aquatic organisms were modified to remove the different consumption rates of freshwater and saltwater organisms and are approved. Item 2(C), which referenced separate criteria for consumption of fish and shellfish from saltwaters, was removed.

Under items (3)(A) and (G), sources of information to calculate numeric criteria were updated to include EPA's *Human Heath Criteria Calculation Matrix and Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health* and is approved. The reference to conversion of bioconcentration factors to 3% lipid for fish tissue was removed and this calculation was not used in the numeric criteria in Table 2.

Under item (3)(C), the fish consumption rate for the calculation of human health criteria was increased to the consumption rate of 17.5 grams/day, as found in EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health* and is approved. The fish consumption rate for waters without sustainable fisheries was increased to 1.75 grams/day under paragraph (6) and is approved.

Under item (3)(F), the factors used for calculation of human health criteria for non-carcinogenic substances were revised to account for childhood exposure and are approved. These include a body weight of 15 kilograms, a water consumption rate of 0.64 liters/day and a fish consumption rate of 5.6 grams/day.

Under paragraph (5), the application of human health criteria under stream flow conditions was clarified.

Under paragraph (10), a reference to the revised criteria in Table 2 that are based on fish tissue concentrations, was added.

Several editorial changes, which don't alter the intent or implementation of the Texas WQS, were made in provisions under §307.6(d) and are approved.

§307.6(e). Total toxicity.

Editorial revisions were made in paragraphs (1) and (2)(E) and are approved.

§307.7. Site-specific Uses and Criteria

§307.7(b)(1) Recreation. The following modifications were made for recreational uses.

The narrative provision was modified to include four categories of recreational uses and is approved.

Under item (b)(1)(A) Freshwater, the following revisions are approved: the contact recreation use was renamed as primary contact recreation use and the single sample criterion was revised to 3 99 colonies/100 ml (*E. coli*); a secondary contact recreation 1 use and a geometric mean criterion of 630 colonies/100 ml (geometric mean) and secondary contact recreation 2 use and geometric mean criterion of 1030 colonies/100 ml (geometric mean). In addition, the geometric mean criterion for the noncontact recreation use was revised to 2,060 colonies/100 ml and is approved. For highly saline inland water bodies, enterococci criteria are established at the same risk levels as used for *E. coli* criteria and are approved.

Under item (b)(1)(B) Saltwater, the following revisions are approved: the contact recreation use was renamed as the primary contact recreation use and the single sample criterion was revised to 104 colonies/100 ml (enterococci); a secondary contact recreation 1 use and a geometric mean criterion of 175 colonies/100 ml (enterococci) was added; and, the geometric mean criterion for noncontact recreation was revised to 350 colonies/100 ml. Language requiring consistency with the Beaches Environmental Assessment and Coastal Health Act of 2000 (Beach Act) was added.

Language regarding the transition from sampling of fecal coliform as an indicator criteria was modified in item (b)(1)(C) to only allow this approach for assessment of recreation uses in high saline inland waters where enterococci is now the applicable indicator and is approved. A limit of two years (from the time of adoption of the 2010 WQS) for use of fecal coliform data was added to this provision. A fecal coliform criterion (geometric mean) was added for the secondary contact recreation 1 and 2 uses. The single sample criterion for fecal coliform under the noncontact recreation use was removed. Language allowing the use of fecal coliform data to assess recreation uses in segments with an oyster waters use was removed.

§307.7(b)(2) Domestic water supply. The following modifications were made for domestic water supply uses and are approved.

Under item (A)(ii), a new designated use for sole-source drinking water use was added. Criteria to support this use are the same as applicable for the public water supply and aquifer protection uses. The previously-approved aquifer protection use was re-numbered as item (A)(iii).

Additional editorial changes, which don't alter the intent or implementation of the Texas WQS, were made in provisions under §307.7(b) and are approved.

§307.9. Determination of Standards Attainment

§307.9(e)(3) Bacteria. The requirement for use of the single sample criterion for standards attainment determinations was removed and is approved. Please see Part III of this enclosure (pages 10-13) for EPA's action on the high-flow exemption included in this provision.

Appendix A - Site-specific Uses and Criteria for Classified Segments

The introductory language regarding indicator criteria for recreational uses was revised in accordance with the provisions in §307.7(b)(1). For segments in Basins 24 and 25 with a designated oyster waters use, the recreational criterion was added to Appendix A for clarification. Footnote 1 for each river and coastal basin was modified to remove language for use fecal coliform as an alternative indicator for recreational uses, consistent with the revised provision in §307.7(b)(1)(C).

In accordance with §307.7(b)(1)(A)(v), the indicator criterion for the primary contact recreation use in highly saline water bodies was revised to enterococci (geometric mean of 33 colonies/100 ml) for the following segments and is approved :

- Segment 0204 - Red River above Lake Texoma
- Segment 0205 - Red River below Pease River
- Segment 0206 - Red River above Pease River
- Segment 0207 - Lower Prairie Dog Town Fork Red River
- Segment 0217 - Lake Kemp
- Segment 0218 - Wichita/North Fork Wichita River
- Segment 0220 - Upper Pease/North Fork Pease River
- Segment 0226 - South Fork Wichita River
- Segment 0230 - Pease River
- Segment 1208 - Brazos River above Possum Kingdom Lake
- Segment 1238 - Salt Fork Brazos River
- Segment 1241 - Double Mountain Fork Brazos River
- Segment 1412 - Colorado River below Lake J.B. Thomas
- Segment 2311 - Upper Pecos River
- Segment 2312 - Red Bluff Reservoir

The indicator criterion for the primary contact recreation uses in segment 0508 – Adams Bayou Tidal and 0511- Cow Bayou Tidal was corrected to enterococci and is approved. Removal of the footnote containing the 30-day averaging period for the geometric mean of the enterococci criteria for segments 1006 and 1007 of the Houston Ship Channel, along the single sample maximum criteria for these two segments, is approved.

Removal of the public water supply uses from segment 1245 – Upper Oyster Creek (lower portion only), segment 1603 – Nueces River Tidal and segment 2308 – Rio Grande below International Dam, based on a review of information conducted by TCEQ, is approved.

Aquatic life uses and associated dissolved oxygen criteria were revised for two segments as shown in the following table and are approved:

Segment	Water Body	Counties	Aquatic Life Use	Dissolved oxygen criteria (average; minimum)
0615	Angelina River/Sam Rayburn Reservoir	Angelina, Nacogdoches	high *	5.0 mg/L; 3.0 mg/L *
1008 **	Spring Creek	Harris, Waller	presumed use for portion removed	criteria associated with presumed use

* corrects EPA's disapproval action from 2001 – use and criteria in above table have been effective since the disapproval.

** Upper reach removed from classified segment 1008 and is considered an unclassified water body (approximately 13 miles). No changes to uses or criteria for portion remaining as classified segment.

EPA will take separate action on the revised aquatic life uses and dissolved oxygen criteria for the following water bodies: segment 0305 – North Sulphur River; 0406 – Black Bayou; 0407 – James' Bayou; 0409 – Little Cypress Bayou (Creek); 0410 – Black Cypress Bayou (Creek); 2485 – Oso Bay and 2491 – Laguna Madre. EPA will also take separate action in the revised criteria for temperature, minerals, and pH in numerous segments.

Appendix B – Sole-source Surface Drinking Water Supplies

Appendix B includes 73 water bodies, or portions of those water bodies, designated with the sole-source surface drinking water supply use, and is approved.

Appendix C – Segment Boundary Descriptions

Significant revisions were made to several segments and are based on use attainability analyses (UAA) conducted by TCEQ and partner agencies.

The upper 12 miles (approximate) of segment 0833 – Clear Fork Trinity above Lake Weatherford was removed from the description of the classified segment. The revised aquatic life use and associated dissolved oxygen criteria for the now unclassified portion of the Clear Fork Trinity are approved subject to completion of consultation under the ESA.

The upper portion (approximately 13 miles) of segment 1008 – Spring Creek was removed from the classified portion. The revised aquatic life use and associated dissolved oxygen criteria for the now unclassified portion of Spring Creek are approved.

The upper portion (42.1 miles) of segment 1305 – Caney Creek was removed from the description of the classified segment. The revised aquatic life use and associated dissolved oxygen criteria for the now unclassified portion of Caney Creek are approved subject to completion of consultation under the ESA.

The upper boundary of segment 1910 – Salado Creek was revised to remove two portions from the classified segment. The revised aquatic life use and associated dissolved oxygen criteria for the now unclassified portion of Salado Creek (uppermost area) are approved subject to completion of consultation under the ESA. A middle reach of Salado Creek is included as an unclassified water body in Appendix D and the revised use and dissolved oxygen criteria are also approved subject to completion of consultation under the ESA.

Corrections were made to the descriptions to the following segments and are approved: 0601 – Neches River Tidal; 0602 - Neches River Below B. A. Steinhagen Lake; 0606 - Neches River Above Lake Palestine; 1225 – Lake Waco; 1226 - North Bosque River; 1246 – Middle Bosque/South Bosque River and 2501 – Gulf of Mexico. Mission Lake was added the description of classified segment 2462. Updated information on elevation levels were incorporated in the descriptions of several reservoirs. Additional editorial changes were made and are approved.

EPA will take separate action on the new description for segment 0410 – Black Cypress Bayou (Creek) and the revised description for segment 1602 – Lavaca River above Tidal.

Appendix D – Site-specific Uses and Criteria for Unclassified Water Bodies

The following water bodies were added to Appendix D. These additions include waters where: 1) the presumed aquatic life use of high or limited was confirmed (i.e., no revision to use); 2) the presumed aquatic life use and/or dissolved oxygen criteria was raised (i.e., upgraded); and, 3) the presumed aquatic life use and/or dissolved oxygen was lowered (i.e., downgraded). The aquatic life uses are based on UAAs or receiving water assessments and are approved.

Segment	Water Body	Counties	Aquatic Life Use	Dissolved oxygen criteria (average; minimum)
0403	Meddin Creek	Marion, Upshur	High	5.0 mg/L; 3.0 mg/L
0504	Prairie Creek	Shelby	High	5.0 mg/L; 3.0 mg/L
0506	Mill Creek	Smith`	High	5.0 mg/L; 3.0 mg/L
0604	Sandy Creek	Angelina	High	5.0 mg/L; 3.0 mg/L
0604	Shawnee Creek	Angelina	Intermediate	4.0 mg/L; 3.0 mg/L
0801	Linney Creek	Liberty	High	5.0 mg/L; 3.0 mg/L
0801	Spring Branch	Liberty	High	5.0 mg/L; 3.0 mg/L
0802	Crooked Creek	Polk	High	5.0 mg/L; 3.0 mg/L
0802	Unnamed tributary of Crooked Creek	Polk	High	5.0 mg/L; 3.0 mg/L
0804	Bassett Creek	Anderson	High	5.0 mg/L; 3.0 mg/L
0804	Town Creek	Anderson	High	5.0 mg/L; 3.0 mg/L
0804	Walnut Creek	Henderson	High	5.0 mg/L; 3.0 mg/L
0809	Walnut Creek	Parker	High	5.0 mg/L; 3.0 mg/L
0840	Spring Creek	Cooke	High	5.0 mg/L; 3.0 mg/L
0901, 0902, 1001, 1002, 1003, 1005, 1006, 1007, 1008, 1009, 1010, 1013, 1014, 1016, 1017, 1101, 1102, 1113, 2421, 2425, 2427, 2428, 2429, 2430, 2438	concrete lined and maintained channelized ditches and streams	Harris	Limited	3.0 mg/L; 2.0 mg/L

Segment	Water Body	Counties	Aquatic Life Use	Dissolved oxygen criteria (average; minimum)
0901, 0902, 1001, 1002, 1003, 1005, 1006, 1007, 1008, 1009, 1010, 1013, 1014, 1016, 1017, 1101, 1102, 1113, 2421, 2425, 2427, 2428, 2429, 2430, 2438	unmaintained channelized ditches and streams	Harris	Intermediate	4.0 mg/L; 3.0 mg/L
1004	Unnamed tributary of Woodsons Gully	Montgomery	High	5.0 mg/L; 3.0 mg/L
1004	Woodsons Gully	Montgomery	High	5.0 mg/L; 3.0 mg/L
1008	Arnold Branch	Montgomery	Intermediate	4.0 mg/L; 3.0 mg/L
1008	Mink Branch	Montgomery	High	5.0 mg/L; 3.0 mg/L
1008	Sulphur Branch	Montgomery	High	5.0 mg/L; 3.0 mg/L
1009	Mound Creek	Waller	High	5.0 mg/L; 3.0 mg/L
1010	Dry Creek	Montgomery	Intermediate	4.0 mg/L; 3.0 mg/L
1010	White Oak Creek	Montgomery	High	5.0 mg/L; 3.0 mg/L
1015	Mound Creek	Montgomery	High	5.0 mg/L; 3.0 mg/L
1202	Clear Creek	Waller	High	5.0 mg/L; 3.0 mg/L
1232	Gonzales Creek	Stephens	High	5.0 mg/L; 3.0 mg/L
1242	Deer Creek	Falls	High	5.0 mg/L; 3.0 mg/L
1244	Cluck Creek	Williamson	High	5.0 mg/L; 3.0 mg/L
1428	Dry Creek (one reach)	Travis	High	5.0 mg/L; 3.0 mg/L
1428	Dry Creek (two reaches)	Travis	Limited	3.0 mg/L; 2.0 mg/L
1428	Harris Branch	Travis	High	5.0 mg/L; 3.0 mg/L
1428	unnamed tributary of Harris branch	Travis	Limited	3.0 mg/L; 2.0 mg/L
1501	Wilson Creek	Matagorda	High	5.0 mg/L; 3.0 mg/L
1806	Camp Meeting Creek (downstream)	Kerr	High	5.0 mg/L; 3.0 mg/L (4.0 mg/L; 2.0 mg/L from July 1 – Sept 30)
1806	Camp Meeting Creek (upstream)	Kerr	High	5.0 mg/L; 3.0 mg/L (2.0 mg/L; 1.0 mg/L from July 1 – Sept 30)

Additional revisions including updated elevation levels for lakes, minor adjustments segment descriptions and other editorial corrections were made in Appendix D. These revisions don't alter the intent or implementation of the Texas WQS and are approved.

EPA will take separate action on the revised aquatic life uses and dissolved oxygen criteria for 0401 – Harrison Bayou, 0410 - Black Cypress Bayou (segment number also revised from 0402) and 1602 – Lavaca River (portion above classified segment).

Appendix G - Site-specific Recreational Uses and Criteria for Unclassified Water Bodies

Based on a UAA, the presumed use of primary contact recreation is revised to the secondary contact recreation 1 use for the following three unclassified water bodies in the San Jacinto River Basin:

- Brickhouse Gully (tributary to segment 1017-White Oak Bayou)
- unnamed tributary to White Oak Bayou
- unnamed tributary to White Oak Bayou

The use and associated criterion of 630 colonies/100 ml for *E. coli* (geometric mean) are approved for each of the above water bodies.

II. REVISIONS THAT EPA IS APPROVING, SUBJECT TO ESA CONSULTATION

EPA is approving the revised aquatic life uses and dissolved oxygen criteria for seven classified water bodies in Appendix A and 16 water bodies in Appendix D, subject to the outcome of consultation with the U.S. Fish and Wildlife Service under Section 7(a)(2) of the Endangered Species Act. The revised uses and dissolved oxygen criteria are based on recommendations made in UAAs.

Appendix A - Site-specific Uses and Criteria for Classified Segments

Segment	Water Body	Counties	Aquatic Life Use	Dissolved oxygen criteria (average; minimum)
0211	Little Wichita River	Clay	(no change)	3.0 mg/L; 2.0 mg/L
0812	West Fork Trinity River above Bridgeport Reservoir	Jack, Archer	intermediate	3.0 mg/L; 2.0 mg/L
0831	Clear Fork Trinity	Parker	(no change)	3.0 mg/L; 2.0 mg/L - (only applicable to portion segment - one mile below dam at Lake Weatherford)
0833 *	Clear Fork Trinity	Parker	intermediate	4.0 mg/L; 2.0 mg/L **
1245	Upper Oyster Creek	Fort Bend	(no change)	24-hour minimum criterion of 1.0 mg/L for lowest portion
1305	Caney Creek above Tidal	Matagorda, Wharton	(no change to classified portion) ***	Site-specific criteria apply from the confluence with Hardeman Slough upstream to the confluence with Water Hole Creek (new upper boundary): 4.0 mg/L; 3.0 mg/L. From March 15 – October, when flows are less than 5.0 cfs, the criteria for this reach are 2.5 mg/L; 2.0 mg/L
1910	Salado Creek	Bexar	Presumed use for intermittent streams for portion removed	2.0 mg/L; 1.5 mg/L

- * Upper reach removed from classified segment 0833 – minimal aquatic life use applies, with dissolved oxygen criteria of 2.0 mg/L (24-hour average) and 1.5 mg/L (24-hour minimum)
- ** Dissolved oxygen criteria of 2.0 mg/L and 1.0 mg/L apply when flow is less than 1.0 cfs in segment 0833
- *** Upper reach (42.1 miles) removed from classified segment 1305 is an unclassified stream with a presumed limited ALU and associated dissolved oxygen criteria of 3.0 mg/L (24-hour average) and 2.0 mg/L (24-hour minimum criterion)

Appendix D – Site-specific Uses and Criteria for Unclassified Water Bodies

Segment	Water Body	Counties	Aquatic Life Use	Dissolved oxygen criteria (average; minimum)
0101	Dixon Creek	Hutchinson, Carson	Intermediate	4.0 mg/L; 2.0 mg/L
0302	Anderson Creek	Bowie	Intermediate	4.0 mg/L; 3.0 mg/L
0303	White Oak Creek	Franklin, Hopkins, Morris, Titus	Intermediate	4.0 mg/L; 3.0 mg/L
0505	Campbells Creek	Gregg	Intermediate	4.0 mg/L; 3.0 mg/L
0506	Sandy Creek	Rains	High	5.0 mg/L; 3.0 mg/L
0506	No. 5 Branch	Wood	High	5.0 mg/L; 3.0 mg/L
0809	Ash Creek	Tarrant, Parker	High	5.0 mg/L; 3.0 mg/L
1202	Big Creek	Fort Bend	Intermediate	4.0 mg/L; 3.0 mg/L
1202	Bessie's Creek	Waller	Intermediate	4.0 mg/L; 3.0 mg/L
1217	North Fork Rocky Creek	Burnet	Intermediate	4.0 mg/L; 3.0 mg/L (2.0 mg/L; 1.0 mg/L when stream flow is less than 1.5 cfs)
1242	Thompsons Creek	Brazos	High	5.0 mg/L; 3.0 mg/L
1246	Tonk Creek	McLennan	High	5.0 mg/L; 3.0 mg/L
1428	Dry Creek (one reach)	Travis	Exceptional	6.0 mg/L; 4.0 mg/L
1434	Maha Creek	Bastrop, Travis	Intermediate	4.0 mg/L; 3.0 mg/L
1910	Salado Creek (from confluence with Beitel Creek upstream to Nacogdoches Rd)	Bexar	Intermediate	4.0 mg/L; 3.0 mg/L
2107	West Prong Atascosa River	Atascosa	Intermediate	4.0 mg/L; 3.0 mg/L

III. REVISIONS THAT EPA IS DISAPPROVING

§307.6. Toxic Materials

§307.6(d). Specific numerical human health criteria. Table 2 – Criteria in Water for Specific Toxic Materials

EPA is disapproving the revised human health criterion of 0.7 mg/kg or 700 ug/kg (measured in fish tissue) for mercury. In 2001, EPA published an updated CWA recommendation for methylmercury to protect human health.¹ EPA's 2001 criterion of 0.3 mg/kg is for levels of methylmercury in fish tissue.

¹ Although Texas' human health criterion is for mercury and EPA's criterion is for methylmercury, there is no practical difference for this action. EPA's 2001 criteria document states "Nearly 100% of the mercury that bioaccumulates in upper-trophic-level fish (predator) tissue is methylmercury."

TCEQ adopted a less stringent mercury criterion of 0.7 mg/kg (in fish tissue), as this is the same value used by the Texas Department of State Health Services (DSHS) to issue fish consumption advisories.

DSHS derived its fish consumption advisory value based on a Minimum Risk Level (MRL) of 0.0003 mg/kg/day used by the Agency of Toxic Substances and Disease Registry (ATSDR). MRLs are similar, but not identical, to reference doses (RfDs). MRLs are guidance values established by ATSDR and are intended for use as screening tools when determining whether further evaluation of potential human exposure at hazardous waste sites is warranted. ATSDR states that MRLs are not intended for use in determining clean-up levels or for other regulatory purposes.²

In the late 1990s, EPA was directed by Congress to request review by the U.S. National Academy of Sciences - National Research Council (NRC) on the available information on health effects of mercury. In developing the criterion of 0.3 mg/kg, EPA reviewed the data sources used by Texas in the calculation of the 0.7 mg/kg criterion. EPA chose not to rely solely on the key study ("Seychelle Islands") used in TCEQ's calculation of its draft criterion. Following the advice of the NRC and another independent peer review panel, EPA calculated RfDs from multiple endpoints from the Faroe Island and New Zealand studies as well as a bounding estimate from the Seychelles study. The published RfD of 0.0001 mg/kg/day considered all of these calculations. EPA's 2001 recommended methylmercury criterion is based on an RfD of 0.0001 mg/kg/day, which is more stringent than ATSDR's MRL.

TCEQ staff previously provided EPA with the Caddo Lake report cited in the State's response to comments on the proposed standards revisions.³ DSHS and ATSDR conducted an investigation of consumption of fish with elevated mercury levels from Caddo Lake. This study is an exposure study rather than an epidemiology study or other measure of health endpoints. These exposure data, while of scientific interest, are not relevant to determining a human health criterion. TCEQ noted that none of the Caddo Lake study participants had blood levels above the "benchmark dose lower limit" of 58 µg/L found in EPA's 2001 methylmercury criteria document. EPA has serious concerns regarding the defensibility of using the benchmark dose lower limit as a means to justify a fish tissue criterion. The benchmark dose lower limit of 58 µg/L is not a "no effect" level. Rather, it is an effect level for a percentage of the population. Also, blood level of mercury is a biomarker of exposure, rather than a biological effect.

For the above reasons, EPA does not find Texas' adopted criterion of 0.7 mg/kg to be scientifically defensible. Although TCEQ may choose to adopt a criterion different from EPA's national recommendation, TCEQ must demonstrate that the State's criterion is scientifically defensible and protective of human health. See 40 C.F.R. 131.11(a)(1) and (b).

Under 40 CFR §131.21(c), new and revised standards do not go into effect for CWA purposes until approved by EPA. Therefore, the previously approved human health criteria for mercury of 0.0122 µg/L (freshwater) and 0.025 ug/L (saltwater) remain effective for CWA purposes. As EPA has previously stated, the State has an option to take a dual approach to resolve the disapproval action:

² ATSDR Backgrounder: Toxicological Profile for Mercury, April 1999. Available at: <http://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=115&tid=24> (please see page 258- Chapter 2 and page A-1Appendix A)

³ DSHS. 2005. *Health Consultation: Mercury Exposure Investigation Caddo Lake Area-Harrison County Texas.* Agency for Toxic Substances and Disease Registry. http://www.tceq.state.tx.us/assets/public/comm_exec/pubs/sfr/085.pdf

- Adopt a water quality criterion of 0.3 mg/kg, or other value that is scientifically defensible and protective of the designated use, in the Texas WQS for implementation in regulatory actions, such as the CWA §303(d) program and wastewater permitting.
- Continue to use a non-regulatory screening level (e.g., 0.7 mg/kg) to trigger a risk assessment for determining the need for fish consumption advisories and bans.

If Texas does not adopt a revised mercury human health criterion that is scientifically defensible and protective of human health, in an expeditious manner, EPA may promulgate the agency's §304(a) criterion recommendation. EPA requests that TCEQ submit a timeline for adoption of a revised, scientifically-defensible criterion with the assumption that the process would take less than three years. EPA requests that the state provide the timeline for this action within six months.

§307.9. Determination of Standards Attainment

§307.9(e)(3) Bacteria.

EPA has identified the following revision which is inconsistent with the Agency's CWA implementing regulations and therefore EPA is disapproving the provision.

§307.9(e)(3) [...]. Samples must not include extreme hydrologic conditions such as very high-flows and flooding immediately after heavy rains. The high-flow exemption applies for a 24-hour period following the last measured or estimated determination that extreme hydrologic conditions exist. A high-flow exemption applies during either of the following hydrologic conditions:

(A) freshwater stream flow that exceeds the 90th percentile flow using historical records for the nearest United States Geological Survey (USGS) or International Boundary and Water Commission (IBWC) gage, as found on the USGS or IBWC websites for many Texas gages, or by calculating the percentile flow for small freshwater streams without gages using statistical corrections to account for relative watershed size; or,

(B) an estimated flow severity index of flood or an equivalent category. This applies to tidal and freshwater streams.

The portion of the revised provision at §307.9(e)(3), shown immediately above, is not consistent with the implementing regulation at 40 CFR §131.5(a)(2) and §131.11(a). Because the revised provision would mean that water quality criteria would not apply, or be in effect during the high flow period, the criteria would not protect the designated and presumed recreational uses.⁴

Under the high flow exemption described in Texas' revised regulation, there is no assurance that primary contact recreation activities such as swimming or whitewater kayaking, canoeing and rafting would not occur under these high flow conditions. Furthermore, in smaller streams, recreational activities may be more likely during high flow events and therefore bacteria water quality criteria should apply.

EPA is not recommending that the state conduct water quality monitoring during unsafe conditions. However, our review of data from water bodies identified as impaired on the Texas 2010 Integrated Report for CWA §303(d) and §305(b) for impaired segments also found that routine sampling events were conducted at times when the 90th percentile flow was exceeded. EPA's review of data also found

⁴ Recreational uses for individual water bodies are specified in Appendix A – Site-specific Uses and Criteria for Classified Segments or Appendix G – Site-specific Recreational Uses and Criteria for Unclassified Water Bodies. The provision at §307.4(j)(2) applies to water bodies not listed in Appendix A or Appendix G.

that implementation of this exemption would not be straight-forward or transparent. For example, the nearest gage station may be located a significant distance downstream from the impaired assessment unit and the flow data may not be representative of the upstream area. Additionally, for many streams the 90th percentile flow represents a very high flow; although in at least one case, the 90th percentile flow was approximately zero cubic feet/second, which would not necessarily represent conditions unsafe for recreation. In other waters, bacteria levels were diluted at flows above the 90th percentile and removal of data collected at the highest flows resulted in a slight increase of the geometric mean.

EPA agrees that there may be site-specific conditions to consider for the assessment of certain data. The data qualifications in the state's assessment procedures allow that best professional judgment be considered to ensure that data is spatially, temporally and hydrologically representative. EPA also notes that the assessment procedures state that sampling should "assess a range of flow and temperature conditions."

EPA is disapproving the above language in §307.9(e)(3) because the revised provision fails to comply with the federal regulation at 40 CFR §131.5(a)(2) and §131.11(a). The water quality criteria must protect the designated or presumed recreation use which applies at all times. Texas has not demonstrated that recreational activities are unattainable during the times when the exemption would be applied. The designated and presumed uses would not be protected during times of the high flow exemption under the revised provision. The State may correct this deficiency by removing it from Texas WQS or by amending the regulation to require that the attainability of the recreational use be assessed when bacteria samples are collected at high flows and revision of the recreational use, if appropriate.

IV. REVISIONS THAT ARE NOT WATER QUALITY STANDARDS UNDER THE CWA

§307.6. Toxic Materials

§307.6(e). Total toxicity.

EPA is taking no action on revised paragraphs (2)(A), (2)(B), (2)(D) under §307.6(e) of the 2010 Texas WQS. These provisions were originally adopted in the 1988 or 1991 Texas WQS. Modifications to these three paragraphs were made in the 1991, 1995, and/or 2000 Texas WQS. Although these provisions were arguably covered by, but not specifically mentioned in, EPA's previous approval actions, EPA does not consider them to be water quality standards because they are not legally binding norms that describe the desired or expected ambient condition of the water body, and specify the designated use(s), water quality criteria, or antidegradation requirements. Under CWA §303(c), EPA only has authority to approve or disapprove new or revised state water quality standards. Because §307.6(e)(2)(A), (B), and (D) are not water quality standards, EPA could not have approved them in 1988, 1991, 1998 or 2008. Thus EPA hereby clarifies that the Agency did not take CWA §303(c) action on §307.6(e)(2)(A), (B), or (D) in its action letters dated June 29, 1988; September 24, 1991; March 11, 1998; and, August 6, 2008.

EPA is also taking no action on the removal of the diazinon provision at (2)(E) of §307.6(e) of the 2000 Texas WQS. This provision was added by Texas in the 1995 WQS and modified in the 2000 WQS. Although it was arguably covered by EPA's 1998 approval action, like the provisions mentioned above, paragraph (2)(E) is not a WQS under CWA §303(c) for the reasons mentioned above in the above paragraph. Thus EPA hereby clarifies that it did not take CWA §303(c) action on §307.6(e)(2)(E) in its March 11, 1998 action letter or in its letter dated August, 6, 2008. In addition, EPA's letters dated June 29, 1988; September 24, 1991; and August 6, 2008, also arguably covered the adoption of §307.6(e)(2)(C) in the 1988 Texas WQS and subsequent revisions in the 1991 and 2000 WQS. This paragraph was not revised in the 2010 WQS, however EPA is taking this opportunity to clarify that

paragraph (2)(C) is also not a water quality standard for the same reasons mentioned in the above paragraph.

Appendix B – Low-Flow Criteria

EPA takes no action on the removal of Appendix B – Low Flow Criteria from the 2000 Texas WQS. In its previous action on the revised low flow values in Appendix B of the 2000 Texas WQS, EPA stated that it considers Appendix B to be an implementation provision, and not a water quality standard under CWA §303(c). Low flow values were originally adopted in the 1981 Texas WQS (Appendix A, later moved to Appendix B) and revised in the 1984, 1988, and 1995 standards. While the low flow values were arguably covered by, but not specifically mentioned in, EPA’s previous approval actions, EPA does not consider them to be water quality standard for the reasons described above. Because the low flow values in Appendix B are not water quality standard, EPA could not have approved them in 1981, 1985, 1988, or 1998. Thus EPA hereby clarifies that the Agency did not take CWA §303(c) action on Appendix B – Low Flow Criteria in its action letters dated March 5, 1981; February 28, 1985; June 29, 1988; and, March 11, 1998.