Brazos River Authority

Proposed Changes to State Water Quality Standards

Water Quality Standards

- Written by the Texas Commission on Environmental Quality (TCEQ) under the authority of the Clean Water Act and the Texas Water Code
- Establish explicit water quality goals throughout the state
- Set in an effort to maintain the quality of water in the state of Texas consistent with:
  - public health and enjoyment,
  - protection of aquatic life,
  - operation of existing industries and economic development of the state.
- Revised periodically

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Types of Standards

- General Criteria
  - pH
  - Chloride
  - Sulfate
  - TDS
  - Chlorophyll *a*
- Aquatic Life Use
  - Dissolved oxygen
  - Toxic substances
- Recreation Use
  - bacteria
- Fish Consumption
  - Bioaccumulative toxics
  - DSHS advisories
- Public Drinking Water
  - Toxic substances
  - TDS

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Proposed Recreation Categories

- **Primary Contact Recreation (PCR) – Water bodies where recreational activities commonly occur that involve a significant risk of water ingestion (swimming, water skiing, wading by children, tubing, surfing, kayaking, etc.)**

- **Secondary Contact Recreation 1 (SCR1) – Water bodies where recreational activities do not involve a significant risk of ingestion and the following activities commonly occur: fishing, commercial and recreational boating, shoreline activity.**

- **Secondary Contact Recreation 2 (SCR2) – Water bodies where recreational activities do not involve a significant risk of ingestion and the following activities occur less frequently than in SCR1 due to limited public access or physical characteristics of the waterbody: fishing, commercial and recreational boating, shoreline activity**

- **Noncontact Recreation (NCR) – Areas where activities, such as ship and barge traffic, occur creating unsafe recreation conditions on the water body. Recreational activities in the vicinity of these water bodies do not involve a significant risk of water ingestion (birding, hiking).**

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Proposed Recreation Criteria Changes

	Geometric Mean Criteria (colonies/100ml)			
Uses	***E. coli* Fresh Water**	**Enterococci (salty inland water)**	**Enterococci (tidal and sea water)**	**Fecal Coliform**
Existing Standards				
Contact Recreation	126		35	200
Noncontact Recreation	605		168	2000
Proposed Standards				
Primary Contact (PCR)	206	54	35	200
Secondary Contact 1 (SCR1)	630	165		1000
Secondary Contact 2 (SCR2)	1030	270		1000
Noncontact Recreation (NCR)	2060	540	350	2000

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Bacteria Changes cont.

- **Classified Segments**
  - PCR will be applied to all classified segments
  - A classified segment can only be assigned SCR1, SCR2 or NCR if a segment specific Use Attainability Analysis (UAA) has been performed and results indicate segment is not used for recreation
  - UAA Procedure available at: http://www.tceq.state.tx.us/assets/public/permitting/waterquality/attachments/stakeholders/draft_rec_uaa_procedures.pdf

- **Unclassified Water Bodies**
  - PCR will be applied to all unclassified segments, except:
  - SCR 1
    - Contact recreation is unlikely to occur
    - Channel depth is less that 0.5 meters
    - Substantial pools (>1 meter deep) do not occur
  - An unclassified segment can only be assigned SCR2 or NCR if a segment specific UAA has been performed and results indicate segment is not used for recreation

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Proposed Changes in Indicator Bacteria for Specific Segments

- Changing from *E. coli* to Enterococci
  - 1208 – Brazos River Above Possum Kingdom Lake
  - 1238 – Salt Fork Brazos River
  - 1241 – Double Mountain Fork Brazos River

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Proposed Changes to Aquatic Life Use Criteria (Dissolved Oxygen)

- Public Water Supply Use is being removed from a portion of segment 1245 (Upper Oyster Creek below dam #3)
- Portion of segment 1245 (Upper Oyster Creek below dam #3) – dissolved oxygen criteria reduced from 4.0 mg/L to 1.0 mg/L

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Proposed Changes to Fish Consumption Use

- **Consumption rates**
  - Increased consumption rate of fish and shellfish from 10 grams per person per day to 17.5 grams per person per day where a sustainable fishery exists
  - Increased consumption rate of fish and shellfish from 1.0 gram per person per day to 1.75 grams per person per day where no sustainable fishery exists.
- **Adding consideration for childhood exposure to toxic substances**
  - Existing standards only considered adult exposure

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Proposed General Criteria Changes (in red)

Segment #	Segment Name	Cl (mg/L)	SO_4 (mg/L)	TDS (mg/L)
1206	Brazos River Below Possum Kingdom Lake	1036 [1020]	595 [500]	2325 [2300]
1227	Nolan River	372 [75]	320 [75]	1383 [500]
1238	Salt Fork of the Brazos River	33670 [23000]	3990 [4000]	62880 [40000]
1239	White River	210 [100]	110 [100]	870 [500]
1240	White River Lake	210 [150]	110 [100]	870 [650]
1242	Brazos River Above Navasota River	3270 [2500]	2400	5500

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Chlorophyll *a* and Total Phosphorus in Reservoirs

- Median chlorophyll *a* (chl *a*) value, at a determined site, will be compared to chl *a* standard
- Median Total Phosphorus (TP) for the site will be compared to TP screening level
- Site will be listed as impaired only if both the chl *a* standard and TP screening level are exceeded
- Based on historic data, we are not predicting any impairments to Brazos Basin reservoirs at this time

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Proposed General Criteria Changes (Appendix F)

Segment #	Lake Name	Site ID	Chlorophyll a Criteria (µg/L)	TP Screening Level (mg/L)
1203	Lake Whitney	11851	7.21	0.025
1205	Lake Granbury	11860	22.53	0.058
1207	Possum Kingdom Reservoir	11865	10.43	0.051
1208	Millers Creek Reservoir	11679	15.65	0.089
1212	Somerville Lake	11881	30.14	0.072
1216	Stillhouse Hollow Lake	11894	1.93	0.015
1220	Belton Reservoir	11921	5.47	0.025
1222	Proctor Lake	11935	28.15	0.069
1224	Leon Reservoir	11939	8.40	0.030

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Proposed General Criteria Changes (Appendix F) cont.

Segment #	Lake Name	Site ID	Chlorophyll a Criteria (µg/L)	TP Screening Level (mg/L)
1225	Lake Waco	11942	9.86	0.107
1228	Pat Cleburne Reservoir	11974	16.88	0.202
1230	Lake Palo Pinto	11977	4.99	0.077
1231	Lake Graham	11979	5.86	0.087
1233	Hubbard Creek Reservoir	12002	5.73	0.056
1234	Lake Cisco	12005	2.24	0.022
1235	Lake Stamford	12006	16.28	0.080
1236	Lake Fort Phantom Hill	12010	8.49	0.062
1237	Lake Sweetwater	12021	13.28	0.041

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Proposed General Criteria Changes (Appendix F) cont.

Segment #	Lake Name	Site ID	Chlorophyll a Criteria (µg/L)	TP Screening Level (mg/L)
1240	White River Lake	12027	3.94	0.027
1241	Buffalo Springs Lake	11529	53.47	0.242
1247	Granger Lake	12095	10.19	0.050
1249	Lake Georgetown	12111	4.42	0.021
1252	Lake Limestone	12123	16.14	0.043
1254	Aquilla Reservoir	12127	13.38	0.050

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Additions to Appendix D - Uses and Criteria for Unclassified Water Bodies

Segment	County	Water Body	Aquatic Life Use*	Dissolved Oxygen (mg/L)
1202	Fort Bend	Big Creek	I	4.0
1202	Fort Bend	Bessie's Creek	I	4.0
1202	Waller	Clear Creek	H	5.0
1271	Burnet	North Fork Rocky Creek	I	4.0
1232	Stephens	Gonzales Creek	H	5.0

*E – exceptional; H – High; I – intermediate; L - limited

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Additions to Appendix D - Uses and Criteria for Unclassified Water Bodies- cont

Segment	County	Water Body	Aquatic Life Use*	Dissolved Oxygen (mg/L)
1242	Brazos	Thompsons Creek Below Confluence of Still Creek	H	5.0
1242	Brazos	Thompsons Creek Above Confluence of Still Creek	I	4.0
1242	Falls	Deer Creek	H	5.0
1242	McLennan	North Fork Cow Bayou	I	4.0
1244	Williamson	Cluck Creek	H	5.0

*E – exceptional; H – High; I – intermediate; L - limited

Additions to Appendix D - Uses and Criteria for Unclassified Water Bodies- cont

Segment	County	Water Body	Aquatic Life Use*	Dissolved Oxygen (mg/L)
1244	Williamson	Cottonwood Creek	H	5.0
1246	McLennan	Tonk Creek	H	5.0

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