

**North Central Texas**



**Water Quality Project**

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**Water Quality  
Assessment in Texas**

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### Texas Surface Water Quality

- Federal Clean Water Act Sections 305 (b) and 303 (d)
- State of Texas has established Standards to protect the purpose for which waterbodies will be used
  - Designated uses are assigned to each water body

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### Water Use Categories

- Aquatic Life
  - Designated to protect aquatic species
  - Dissolved Oxygen, toxic chemicals
- Contact Recreation
  - Estimates the relative risk of swimming and other water sports
- Public Water Supply
  - Indicator of whether water is available as a source for a public water system
  - Metals, pesticides, other toxic chemicals
- Fish Consumption
  - Protect public from consuming fish that may be contaminated

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### Water Quality Standards

- Used by TCEQ regulatory programs to establish reasonable limits on permitted dischargers
- Numeric Standards
  - Segment specific numbers
- Narrative Standards
  - Descriptive standards to protect aesthetics and designated uses
  - Screening limits non-segment specific numeric standard for nutrients

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### Criteria Applicable to Cedar Creek

- Numeric Criteria
  - Dissolved Oxygen
  - pH
- Narrative Criteria
  - Nitrogen
  - Phosphorus
  - Excessive Algal Growth
  - Chlorophyll a

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### Dissolved Oxygen

- Concentrations correlated with the occurrence and diversity of aquatic life in water
- 10 sample minimum
- Average daily minimum criteria – 5.0 mg/L
- If 10% or more of the samples are less than 5.0 mg/L then site is considered impaired

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### pH

- General water quality indicator
- Major factor affecting most chemical and biological reactions
- 10 sample minimum
- Absolute minimum criteria – 6 mg/L
- Absolute maximum criteria – 8.5 mg/L
- If 10% or more of the samples are less than 6 or exceed 8.5 then site is considered impaired

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### Chlorophyll-*a*

- Chlorophyll-*a* is the primary photosynthetic chemical found in algae and an indicator of the free floating algae in water
- Chlorophyll-*a* in the water column also reduces the amount of light available to rooted aquatic plants
- TCEQ proposed Chl'a Criteria: 23.47 ug/L\*
- Annual Median Dam Site (CC-06) 16.5 ug/L
- Annual Median Water Intake (CC-04) 19.5 ug/L
- Chl-*a* is controlled through measures that limit the loadings of nitrogen & phosphorus

\*Per draft TCEQ Nutrient Criteria – May 16, 2007



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### Nutrients

- Compounds which stimulate and sustain the growth and development of aquatic plants and algae
- Nitrogen
  - Proposed Criteria - .995 mg/L\*
  - 1989-2006 Annual median at Dam Site 0.96 mg/L
  - 1989-2006 Annual median at Water intake 0.97 mg/L
- Phosphorus
  - Proposed Criteria - .068 mg/L\*
  - 1989-2006 Annual median at Dam Site 0.06 mg/L
  - 1989-2006 Annual median at Water intake 0.08 mg/L

\*Per draft TCEQ Nutrient Criteria – May 16, 2007