

# Monitoring Program

## 2010 Texas Water Quality Inventory and 303(d) List (November 18, 2011)

### Surface Water Quality Monitoring Program

The Surface Water Quality Monitoring (SWQM) Program, established in 1967 by the Texas Water Quality Board and subsequently moved to the Texas Commission on Environmental Quality, encompasses the full range of activities required to obtain, manage, store, assess, share, and report water quality information to other TCEQ teams, agency management, other agencies and institutions, local governments, and the public. Primary statutory authority for the SWQM Program is provided under Section 26.127 of the Texas Water Code (TWC), which states, “The executive director has the responsibility for establishing a water quality sampling and monitoring program for the state. All other state agencies engaged in water quality or water pollution control activities shall coordinate those activities with the Commission.” The SWQM Program is significantly driven by guidance in Sections 104(b), 106, 205(j), 303(d), 305(b), 314, 319, and 604(b) of the Federal Clean Water Act (CWA) of 1987. The TCEQ SWQM Program is largely funded by a CWA Section 106 cooperative grant agreement with US Environmental Protection Agency (USEPA) Region 6.

The basis for the SWQM Program is outlined in the Texas Administrative Code (TAC), Title 30, Part 1, Chapter 307.9, Determination of Standards Attainment of the Texas Surface Water Quality Standards (TSWQS). The SWQM Program methods are further defined in the *SWQM Procedures* (2003, 2007) and the *Guidance for Assessing and Reporting Surface Water Quality in Texas* (2006). These documents can be found on the Agency web site.

### Texas Clean Rivers Program

The Texas Clean Rivers Program (CRP) is a State-fee funded water quality monitoring, assessment, and public outreach program. The CRP is a collaboration of 15 partner agencies and the TCEQ. The CRP provides the opportunity to approach water quality issues within a watershed or river basin at the local and regional level through coordinated efforts among diverse organizations.

Primary statutory authority for the CRP is provided under Section 26.0135 of the TWC which states, “To ensure clean water, the commission shall establish the strategic and comprehensive monitoring of water quality and the periodic assessment of water quality in each watershed and river basin of the state. In order to conserve public funds and avoid duplication of effort, subject to adequate funding under Section 26.0291, river authorities shall, to the greatest extent possible and under the supervision of the commission, conduct water quality monitoring and assessments in their own watersheds.” The basis for the CRP is outlined in the TAC Title 30, Part 1, Chapter 220, Regional Assessments of Water Quality, Subchapter A-*Program for Monitoring and Assessment of Water Quality by Watershed and River Basin*.

To achieve the goals of the CRP, a long term plan was developed with input from all partner agencies to outline the focus of the program. The program goal is to “*Maintain and improve the quality of water within each river basin in Texas through an ongoing partnership involving the Texas Commission on Environmental Quality, river authorities, regional entities, local governments, industry, and citizens. The program’s management approach will identify and evaluate water quality issues, establish priorities for corrective action, work to implement those actions, and adapt to changing priorities*”. Associated with this goal, six specific objectives were defined and are implemented throughout Texas' 23 river and coastal basins. These objectives are described in the CRP Long Term Plan (March 22, 2006).

The long term objectives are:

1. Provide quality-assured data to the TCEQ for use in water quality decision-making.
2. Identify and evaluate water quality issues.
3. Promote cooperative watershed planning.
4. Inform and engage stakeholders.
5. Maintain efficient use of public funds.
6. Adapt program to emerging water quality issues.

Details of these six objectives are outlined in the *CRP Long Term Plan* which can be found on the Agency the web site.

### **CRP Guidance**

CRP revises their guidance document every two years. The CRP guidance explains to TCEQ's partners how to accomplish the goals and objectives of the CRP

The guidance document consists of the following:

- Introduction to the Guidance
- Task 1–Project Administration
- Task 2–Quality Assurance
- Task 3–Water Quality Monitoring
- Task 4–Data Management
- Task 5–Data Analysis and Reporting
- Task 6–Stakeholder Participation and Public Outreach
- Task 7–Special Projects

### **Overall Focus of TCEQ SWQM Programs**

TCEQ’s monitoring programs are designed to provide information needed to support the following requirements of §305(b) of the CWA, including:

- A description of the water quality in all waters of the state and the extent to which the quality of water provides for the protection and propagation of a balanced population of shellfish, fish, and wildlife and allows recreational activities in and on the water.

- An estimate of the extent to which CWA control programs have improved water quality or will improve water quality for the purposes of paragraph (b)(1) of this section, and recommendations for future actions necessary and identifications of waters needing action.
- An estimate of the environmental, economic and social costs and benefits needed to achieve the objectives of the CWA and an estimate of the date of such achievement.
- A description of the nature and extent of NPS pollution and recommendations of programs needed to control each NPS category, including an estimate of implementation costs. The §305(b) Report and 303(d) List identifies NPS contributions to identified water quality impairments. The TCEQ prioritizes water bodies identified as impaired or threatened by NPS pollution for CWA §319(h) grants and other available funding.
- An assessment of the water quality of all publicly owned lakes, including the status and trends of such water quality as specified in §314(a)(1) of the CWA. This information is provided in the CWA §305(b) Texas Water Quality Inventory Report [§305(b) Report] which is submitted to USEPA every two years. Substantial improvements are needed in the reporting of economic and social costs, as well as recommendations for future water quality controls and implementation.

## **Key Components**

The following are the key components of the monitoring programs:

- Ensure a comprehensive assessment of all state waters.
- A wide range of indicators are used to provide assessment information including, physico-chemical measurement; chemical constituents in water, sediment, and tissue; biological measurements; and ambient toxicity.
- The program works to ensure consistency and share data with other monitoring entities including all agency water programs, the drinking water and Total Maximum Daily Load (TMDL) programs, federal monitoring programs at USEPA, International Boundary and Water Commission (IBWC) and US Geological Survey (USGS), state programs at Texas Parks and Wildlife (TPWD), Texas Department of State Health Services (DSHS), Texas General Land Office (GLO), and river authorities and local cooperators in the Clean Rivers Program (CRP).
- All data are collected under an approved Quality Assurance (QA) program. The SWQM Program conducts monitoring activities under an USEPA approved Quality Assurance Project Plan (QAPP). Data collected outside the TCEQ SWQM Program (for example, CRP, TMDL, and other non-106 funded projects) are done so under a TCEQ approved QAPP. Data is also acquired from outside entities (USGS, DSHS, TPWD) and quality approved by TCEQ staff.

- The §305(b)/ §303(d) activities are long-term planning activities implemented through the TCEQ Water Quality Management Plan (QMP). The emergency response and complaint programs are TCEQ's means for addressing water quality problems in the shorter term. However, emerging monitoring and water quality issues are investigated by the SWQM Program. Recent examples include MTBE and perchlorate in surface water, and the need for low-level metals collection and analysis methods.

The statewide SWQM Program is responsible for the collection of data that accurately describes the physical, chemical, and biological characteristics of state waters. Data collected as part of the statewide monitoring program and for special projects are used to achieve the following goals:

- Characterize existing water quality and emerging problems.
- Define long-term trends.
- Determine water quality standards compliance.
- Describe seasonal variation and frequency of occurrence of selected water quality constituents.
- Produce the State of Texas Water Quality Inventory, which is required by Section 305(b) of the CWA. This assessment enables the public, local governments, state agencies, the Texas Legislature, the USEPA, and Congress to make water quality management decisions.

## **Coordinated Monitoring Schedule**

Coordinated monitoring serves to increase the efficiency of surface water data collection and analysis by the SWQM Program and its participating entities. Coordinated statewide monitoring reduces the duplication of effort, improves spatial coverage of monitoring sites and consistency of parametric coverages.

The merits of maintaining or relocating existing monitoring sites and changing parametric coverages are discussed in relation to historical baseline sampling, identification of use impairments and water quality concerns from the § 305(b) Report, local knowledge of water quality problems, distribution of significant point source discharges, special studies, and TMDL monitoring projects. Special attention is focused on spatial gaps in station locations and gaps in different data needs. New sites are added, existing sites may be relocated, and parametric coverages may be changed based on the discussions at the meetings.

Planning and development of the coordinated monitoring schedule (CMS) takes place in January through May of the preceding fiscal year. The meetings are held in each major river basin and are hosted by the CRP Basin Planning Agency. The schedule is continually updated during the annual planning process with a final version available on September 1 of each fiscal year. The web based CMS also allows for changes to be made during the year so the schedule is kept current. Those participating include the CRP, other state agencies, federal agencies, municipalities, and others. All water quality monitoring groups that collect SWQM data and commit to comply with TCEQ requirements for collecting quality-assured data are invited to participate in the meetings. The CMS can be

found online at <http://cms.lcra.org> . The CMS is searchable by year (2003-2008), river basin, river segment, or monitoring entity.

## **Coordinated Monitoring Resources**

To support the statewide coordinated monitoring effort, the TCEQ has developed guidance for site selection and for sampling requirements for routine, special study, and targeted monitoring. The guidance resources include:

- Coordinated monitoring schedule.
- Instructions for completing the coordinated monitoring schedule.
- Guidance for developing regional and basin monitoring schedules.
- Monitoring priorities and projects.

## **SWQM and Assessment Strategy**

TCEQ has a comprehensive monitoring program strategy that addresses water quality management needs and addresses all water body types including streams, rivers, lakes, reservoirs, bays, estuaries, and wetlands. The monitoring program strategy is a long-term implementation plan and includes a timeline, not to exceed ten years, for implementing the strategy. The strategy identifies the technical issues and resource needs that are currently impediments to an adequate monitoring program.

The monitoring strategy contains information on how the monitoring program elements set by EPA are to be achieved. The *Texas Surface Water Quality Monitoring and Assessment Strategy* and other SWQM guidance documents are available online at <http://www.tceq.texas.gov/waterquality/monitoring/index.html> .

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