Texas Commission on Environmental Quality
Total Maximum Daily Load Program
GI-480

Improving Water Quality in Aquilla Reservoir

A Project to Protect a Source of Drinking Water

The state of Texas requires that water quality in Aquilla Reservoir (Segment 1254) be suitable for swimming, wading, fishing, drinking (with treatment), and a healthy aquatic ecosystem. However, testing of treated drinking water found excessive levels of atrazine (an herbicide) affecting the lake's use as a water supply.

To address these concerns, people who have a stake in the watershed worked with TCEQ to develop a total maximum daily load (TMDL) and its implementation plan (I-Plan). A TMDL is like a budget—it determines the amount (or load) of atrazine the reservoir can receive and still support the public water supply use. The allowable load is then allocated among categories of sources within the watershed. The I-Plan outlines the measures that will be used to reduce pollution. Both urban and agricultural sources of atrazine were identified in the watershed.

Learn more about water quality standards, monitoring, and TMDLs by reading Preserving and Improving Water Quality[1], available on our website or in print.

The Aquilla Reservoir Watershed

Aquilla Reservoir is a 3,280-acre reservoir on Aquilla and Hackberry Creeks in the Brazos River Basin southwest of Hillsboro. The reservoir was constructed in 1983 and is owned by the U.S. Army Corps of Engineers. It was built for water supply, flood control, and recreation purposes. The watershed is 255 square miles and is characterized by Blackland Prairies and Cross Timbers.

Aquilla Reservoir is an important resource to nearby communities. In 2000, it provided drinking water to Hillsboro (population: 7,072), Milford (population: 711), Bynum (population: 192), and several water supply companies (Chatt, Files Valley, Hill County, Parker, Branden-Irene). Three parks operated by the Corps of Engineers are located on the lake: Dairy Hill Ramp (12,700 visitors annually), Old School Ramp (14,300 visitors annually), and Outlet Area (6,900 visitors annually). Visitors to the reservoir are important contributors to the local economy.

Public Participation

In all its projects, TCEQ seeks to gather opinion and information from people who represent government,

permitted facilities, agriculture, business, environmental, and community and private interests in the watershed.

Two forums participated in the development of this TMDL and I-Plan. Under direction of TCEQ, the Surface Water Protection Committee was formed. It was comprised of representatives from the Texas State Soil and Water Conservation Board (TSSWCB), the Texas Department of Agriculture, Texas A&M University, Novartis, USDA-Natural Resources Conservation Service, USDA-Agricultural Research Service, the Texas Farm Bureau, the Brazos River Authority, and municipal representatives. A second stakeholder group was formed that included agricultural producers and representatives of affected water supply companies and cities.

For More Information

E-mail us at tmdl@tceq.texas.gov or call us at 512-239-6682 and mention Aquilla Reservoir.

Or visit the project webpage at: www.tceq.texas.gov/waterquality/tmdl/10-aquilla.html>.

[1] https://www.tceq.texas.gov/publications/gi/gi-351

TMDL Adoption/Approval Dates

TCEQ Adoption: March 23, 2001
EPA Region 6 Approval: October 30, 2002

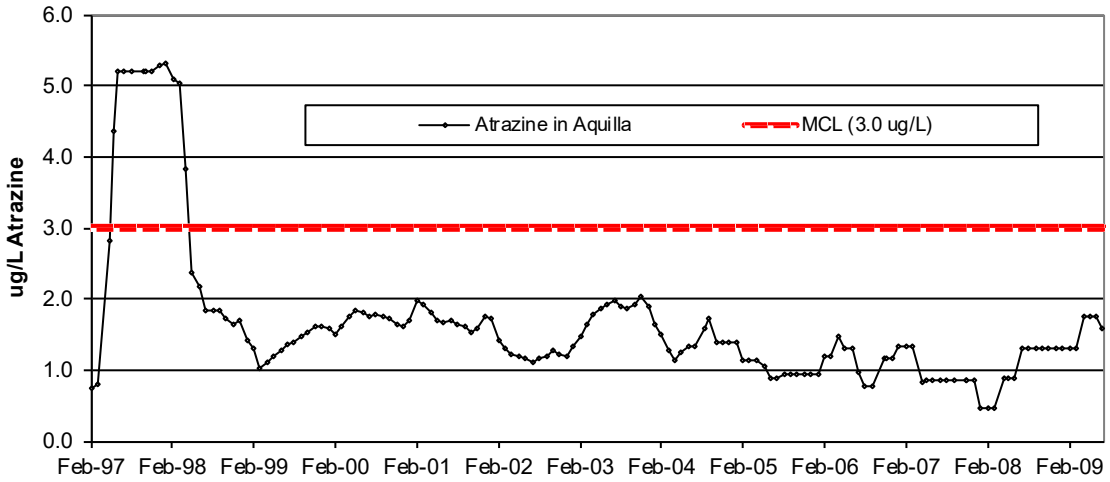
I-Plan Approval Date

TCEQ Approval: January 18, 2002

Implementation Highlights

- The water quality goal has been achieved. The sampling results indicate that atrazine concentrations are well below the maximum contaminant level (MCL) (see Figure 1).
- Implementation activities fell into two primary categories: (1) implementing best management practices (BMPs) to reduce atrazine runoff, and (2) intensive monitoring of the reservoir and its tributaries to determine whether water quality is improving.
- Agricultural producers in the Aquilla Reservoir watershed made a concerted effort to reduce atrazine discharges in runoff by voluntarily implementing BMPs. In a coordinated response, multiple agencies supplied assistance in the form of educational outreach programs, technical assistance to producers in developing BMPs and complying with regulations for use of agricultural chemicals, and cost-share funding.
- TCEQ will continue to monitor reservoir quality on a routine basis. The Aquilla Water Supply District will continue to monitor finished drinking water in compliance with the Safe Drinking Water Act.

Figure 1. Atrazine Levels in Aquilla Reservoir
*Running Annual Averages**



* Based on monthly mean or individual concentrations collected monthly or quarterly.
February 1997 to December 1998: concentrations in finished drinking water samples collected and analyzed by AWSD.
February 1998 to January 2002: concentrations in surface water samples collected and analyzed by AWSD.
March 2001 to July 2009: concentrations in surface water samples collected and analyzed by TCEQ-Region 9.