



Improving Water Quality in Lake Worth A Project to Protect the Fish Consumption Use

In April 2000, the Texas Department of State Health Services (DSHS) issued a fish consumption advisory to protect consumers from adverse health effects caused by accumulation of polychlorinated biphenyls (PCBs) in fish. In advisory ADV-18, the DSHS warned people to limit or stop eating all species of fish caught in the lake. PCBs is a general term used to describe 209 toxic, environmentally persistent compounds.

TCEQ completed a total maximum daily load (TMDL) project to determine the pollutant limits necessary to restore support of the use. The goal of a TMDL is to determine the amount (or load) of a pollutant that a body of water can receive and still support its assigned uses. The allowable load is then allocated among categories of sources within the watershed. After completing the TMDL, TCEQ developed an implementation plan (I-Plan) to reduce pollutant loads.

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

The Lake Worth Watershed

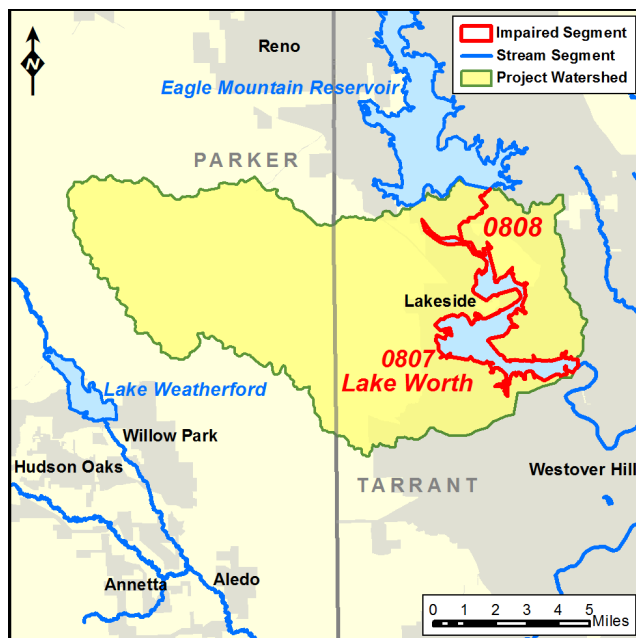
Lake Worth is a 3,558-acre impoundment of the West Fork Trinity River, located directly south of Eagle Mountain Reservoir. Although the lake itself is almost entirely within the Fort Worth city limits, the contributing watershed extends 2,064 square miles across Tarrant and Parker counties and includes several other smaller municipalities.

Lake Worth is used for recreation and is also source of drinking water for the city of Fort Worth. Land use in the watershed is about 35 percent urban and 60 percent rural.

Two large military-industrial facilities are on the south side of the lake—the U.S. Naval Air Station Joint Reserve Base—Fort Worth (NASFW) and Air Force Plant No. 4 (AFP4). Both facilities are currently classified as cleanup sites under the federal Resource Conservation and Recovery Act (RCRA). Cleanup efforts are underway at the AFP4 site.

Project Development

TCEQ began this project in March 2003, collecting additional data in cooperation with the United States Geological Survey. Both the new and the historical data



pointed to the AFP4 facility as the probable source of the PCBs.

The TMDL I-Plan relies heavily on the RCRA cleanup efforts at AFP4. Also under the I-Plan, fish tissue in Lake Worth is sampled periodically to monitor the effectiveness of cleanup efforts.

TMDL Implementation

The DSHS conducted the first fish tissue monitoring under the I-Plan in October 2008. DSHS analyzed the risks of eating the fish, completing their report in fall 2010. As a result, DSHS issued advisory ADV-45, which extended ADV-18 to include Segment 0808.

The second fish tissue monitoring effort was conducted November 2016. Subsequently, in March 2018, DSHS issued advisory ADV-60, limiting consumption of seven fish species due to dioxins and PCBs.

However, DSHS monitoring has shown some improvement. The overall mean concentration of PCBs in all fish has declined. The mean concentration for the 80 samples collected in 2008 was .064 milligrams per kilogram (mg/kg) PCBs. In 2016, the concentration was reduced by half to .032 mg/kg PCBs.

¹ <https://www.tceq.texas.gov/publications/gi/gi-351>

Public Participation

TCEQ held a public meeting to receive comments on the TMDL for PCBs in Lake Worth at Fort Worth City Hall on May 12, 2005. At the same location, TCEQ held a meeting on July 6, 2006 to receive comments on the I-Plan.

For More Information

Visit the project webpage at:

www.tceq.texas.gov/waterquality/tmdl/63-lakeworth-pcbs.html

Email us at tmdl@tceq.texas.gov or call us at 512-239-6682.

See the status of the federal cleanup at AFP4 on EPA's webpage at:

cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.cleanup&id=0603610

TMDL Dates

Start Date: March 2003

TCEQ Adoption: August 10, 2005

EPA Region 6 Approval: October 13, 2005

TMDL Addendum: July 2014

EPA Region 6 Approval: November 25, 2014

I-Plan Dates

TCEQ Approval: August 23, 2006

TMDL Highlights

- TCEQ adopted a TMDL for PCBs in fish tissue for Lake Worth (Segment 0807) in August of 2005.
- Air Force Plant No. 4 was identified as the probable source of the PCBs in the fish.
- In July 2014, TCEQ approved an additional TMDL for the watershed, adding allocations for the West Fork Trinity River below Eagle Mountain Lake (Segment 0808). This TMDL addendum was submitted to EPA via the state's July 2014 Update to the State of Texas Water Quality Management Plan. EPA approved the addendum on November 25, 2014.

I-Plan Highlights

- RCRA cleanup efforts at AFP4 are proceeding. PCB concentrations in fish tissue have stabilized and show a slow decline from levels in 2000.
- The 2018 fish consumption advisory (ADV-60) from DSHS recommends people limit or avoid consumption of seven species of fish due to PCBs and dioxins.
- Overall, the mean PCBs concentrations in fish have declined. Fish tissue monitoring will continue.

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