

7. WATER SUPPLIERS AND USERS

More than two million people rely on Lake Tawakoni for their drinking water supply. The city of Dallas has rights to the largest volume of water from the reservoir to supply a portion of the needs of its wholesale and retail customers. Other cities and water supply corporations around the reservoir depend on Lake Tawakoni for their water supply, and some of them have no feasible supply alternative.

Recreational water use at Lake Tawakoni is extremely popular. The reservoir is considered to be one of the State's premier sand bass fisheries, and striped and catfish are also sought after. The reservoir was recently ranked by the Dallas Morning News as one of the top ten fishing lakes in Texas (Sasser 2000). Because of its proximity to the Dallas/Fort Worth area, the reservoir is a popular destination for fishermen, as well as recreational boaters and users of personal watercraft. Several of the towns around the reservoir depend on the recreational traffic for a significant portion of their revenues.

7.1 City of Dallas

The city of Dallas maintains the largest intake in the reservoir. Lake Tawakoni is normally the source of up to thirty percent of the City's water supply. The City shut down its intake in the reservoir on March 10, two days after the spill, to prevent the possibility of taking contaminated water into the raw water system (DMN 2000). This also eliminated the draw effect of the intake on the migration of the contamination, possibly delaying MtBE from reaching the main body of the reservoir as quickly as it would have if the intake were operating. This provided more time for affected cities and water supply corporations to evaluate the event and develop an appropriate response.

7.2 Water Customers with Contaminated Intakes

7.2.1 West Tawakoni

The city of West Tawakoni's raw water intake experienced the highest levels of contamination from the gasoline spill. The City's intake is located along the south shore of Caddo Inlet, where contamination was most concentrated in the reservoir.

MtBE concentrations were detected at their highest levels near the intake on March 18 at 740 ppb. MtBE was found near the intake until April 6, and contamination

levels have been below detectable limits since that date, except for a single occurrence on May 6 when MtBE was detected at 1 ppb.

An aeration system was installed on March 14 by Explorer around the perimeter of the City's intake in an attempt to volatilize the MtBE and any other gasoline contamination. This system was essentially an underwater air bubbler. MtBE concentrations continued to increase near the intake despite the aeration system, so the City stopped drawing water from the reservoir on March 15.

On March 16, Explorer began making deliveries of drinking water in 6,000-gallon tank trucks to the West Tawakoni treatment plant storage tank. Proper hose connections from the trucks to the storage tank were provided by Dallas Water Utilities to expedite the delivery process. Explorer delivered 247 truckloads, totaling 1.5 million gallons of water, to the City over nine days.



Water Deliveries to West Tawakoni

Additionally, Explorer installed a carbon filtration unit at the City's water treatment plant on March 22. The carbon filtration unit, installed as a final polishing stage, was intended to remove MtBE from the treated water before delivery to the City's customers. The City tested water from the new treatment system for a period of 48 consecutive hours before delivering it to customers. No plan or timetable has been set for the removal of the carbon filtration system from West Tawakoni's plant.

7.2.2 Commerce

The raw water intake for the city of Commerce is located on the eastern bank of Lake Tawakoni, directly east of Caddo Inlet. SRA monitored the reservoir near the City's intake on a daily basis from March 14 to April 14, when periodic monitoring began. MtBE was detected near the intake structure from March 23 to April 4 at or below two ppb, except for March 24 when MtBE was detected at 11 ppb. The City installed an aerator at its intake in Lake Tawakoni in late April to mitigate the levels of possible future MtBE contamination.

7.2.3 Greenville

The raw water intake for the city of Greenville is also located on the eastern bank of Lake Tawakoni, directly east of Caddo Inlet. The City shut down the intake to Lake Tawakoni on March 10 when it learned of the spill and utilized water from its own reservoir until the contamination was determined to have subsided. The City began taking water from Lake Tawakoni again on April 25. Aeration systems were installed at that time as a precautionary measure. The city of Greenville experienced effectively the same level of contamination at its intake as the city of Commerce.

7.2.4 Cash Water Supply Corporation

Cash WSC obtains water from Lake Tawakoni for treatment and delivery to cities and unincorporated areas near the reservoir. Cash's intake, located in the reservoir's northern inlet, remained active throughout the contamination event. About one week after the release, MtBE was detected migrating to the east end of Caddo Inlet and north toward Cash's intake. MtBE concentrations were first detected near the intake on March 19 and reached their highest levels on March 20 at 19 ppb. Contamination dropped to below detectable levels the next day, but MtBE was subsequently detected daily at less than two ppb until April 5 near the intake, when levels again dropped below detectable limits.

Cash has another raw water intake further north in the same inlet. Consideration was given to shutting down the main intake and activating the intake to the north, which was more remote from the reservoir contamination. SRA monitored the area near the alternative intake for contamination beginning March 21, but Cash opted to continue using the main intake. As a result, SRA stopped monitoring the area near the north intake after March 28.

7.3 Water Customers With Uncontaminated Intakes

Several other water suppliers have intakes located in the reservoir. MtBE contamination from the gasoline spill was not detected at these intakes, and the drinking water quality was not degraded by the reservoir contamination. Nevertheless, these water suppliers were impacted by the release. Each entity conducted extra water testing of the raw water supply, monitored the developing situation, and considered contingency plans in the event contamination reached their intakes.

Most of the uncontaminated intakes are located in the main body of the reservoir. The cities of Point and Emory have intakes on the eastern side of the main body. An intake located next to the spillway is shared by Wills Point, South Tawakoni WSC, and Edgewood. MacBee WSC and the city of Terrell share a water intake on the western side of the main body. Terrell has not drawn from this intake in several years. As the contamination dispersed throughout the reservoir, trace levels of MtBE approached the intakes of Emory to the east and MacBee WSC to the south but never reached them.



City of Point Raw Water Intake

Combined Consumers WSC draws water from an intake located in the far reaches of Kitsee Inlet, which receives water from the South Fork Sabine River watershed. SH 751 crosses the inlet on a levee just east of the intake. A cut-through is located on the south end of the levee, while the intake is located on the inlet's north bank. Flow through the cut-through is typically into the main body of the reservoir, although occasions of reverse flow do occur when the other two watersheds received significantly more rainfall than does the South Fork. Because of these protective characteristics, Combined Consumers' intake is considered to be the most protected from the effects of the Explorer Pipeline gasoline spill.