

HDPE Pipe Answer To Drought Crisis in Texas Town Receives State Aid For Water Pipeline

Ballinger, TX—Images of polyethylene pipe curving across the West Texas landscape while a massive ditcher carves a slice out of the parched earth might appear to be just another construction site. But for the citizens of Ballinger, Tex., it represents much more than that.

This particular pipeline is part of a State of Emergency Relief Effort passed by the Governor of Texas to rescue the city from severe drought.

A 10-inch diameter high-density polyethylene (HDPE) pipeline stretching 14 miles now transports water from the Abilene-Ivey pipeline (a raw water pipeline that provides water for the city of Abilene) to the Ballinger supply lake, which has slowly dried up over the last seven years due to the extended drought.

The 14-mile pipeline was completed in early 2004.

Project officials and the city's more than 5,000 residents see this as a reliable solution until the lake fills back up. If the lake does refill, the pipeline will be used as a backup source. If not, the pipeline will continue to serve its present purpose. The Office of Rural Community Affairs (ORCA) and the Texas Commission on Environmental Quality (TCEQ) are funding the \$700,000 project.

“We plan to have the whole town's water distribution system replaced with polyethylene within the next 10 years,” said City Administrator Tommy New. “If you're going to ask people to conserve water, it just makes sense for the city to do the same thing and not let it leak from the distribution system.”

Polyethylene pipe provides a leak-free system through its joining process – heat fusion – that produces strong, totally sealed connections. Further, polyethylene is a dielectric material and is frequently used as an insulating material for electrical conductors. Because it is a non-conductor, polyethylene is simply not subject to corrosion.

PPI reports that HDPE pipe is used for more than 90 percent of the fuel gas distribution piping in the United States because of its reliability, leak-free performance and resistance to corrosion.

“Many municipalities – and in this case a smaller-sized city suffering from a drought – are now using HDPE pipe to construct a leak-free and corrosion-resistant water distribution system to deliver water to their residents,” said PPI Technical Director Stephen Boros. “As a result, they're avoiding the problems and maintenance costs associated with leaky systems.”

The pipeline in Ballinger replaces a five-mile HDPE pipeline that was constructed six months earlier to carry water from the Colorado River to the city lake. A cofferdam was built across the creek channel of the lake to ensure the incoming water would stay in the vicinity of the pumping station. Since then, low Colorado River levels have driven mandates that prevent the city of Ballinger from continuing to draw water from the river.

“We told our designing engineer that we would only consider polyethylene for the pipeline,” said New. “It is so easy to work with and tough enough to handle the rough

terrain and can be installed into the ditch with a backhoe. If we were using PVC with gasket connections, we would have to have twice the manpower and double the time to build the pipeline because you have to be so careful with it.”

The pipeline was fused with a machine mounted on a rubber track system that enables the machine to shift into position to properly align the pipe ends for fusion. The machine is self propelled and can track to different fusion staging areas instead of having to be loaded onto a separate transport vehicle.

Seven directional bores were performed under roads with HDPE that was encased in steel and five ranch owners donated easements to make the pipeline possible. The project also calls for 41 valves, which will be fused onto the pipeline with sidewall fusion.