

ISCO Provides Technical Support for Lake Marion Regional Water System Project

Santee, SC

The Army Corps of Engineers was responsible for a nearly \$6 million Lake Marion Regional Water System project in South Carolina. The project needed to create a regional water system to supply cities and towns in six counties, supplying water from Lake Marion to the Holly Hill reach in Santee, SC through an I-95 corridor. The goal of the waterline was to provide clean, treated and affordable water for the region.

The goal of affordable water included supplying water for less than \$1.00 per 1000 gallons. With this new pipe line the owner will be able to provide water for \$0.55 per 1000 gallons and even less as more end users are added.

Initially, the Corps planned to use restraint joint ductile iron pipe for a water crossing on the project. The use of ductile iron pipe is a standard in the Corps' projects. However, Carl Erdle, ISCO representative, spoke with the consulting engineer Hazen & Sawyer of Charlotte, NC, and provided them with information on the benefits high-density polyethylene pipe (HDPE) and how HDPE was a better choice for the water crossing.

The Corps was at first hesitant about using a non-traditional pipe material for the project but the benefits of HDPE outweighed any concerns. ISCO was able to provide technical assistance throughout the design phase that eliminated those concerns.



HDPE pipe being fused onsite.

The ISCO Solution

ISCO provided 3,200 feet of 30-inch DIPS DR-11 HDPE pipe for the water crossing section of the Lake Marion Regional Water System project.

Horizontal directional drilling (HDD) was chosen as the form of installation because the Corps wanted to avoid open cutting roadways and water crossings to minimize the disturbance to the area and environment.

"ISCO's HDPE pipe provided this very important transmission main project with a product that can be easily pulled through the directional drilled wetlands crossings, has fewer joints per foot, and is inert so corro-

sion won't ever be an issue," said Andrew S. Vane, P.E., engineer with Hazen & Sawyer. "ISCO has been instrumental in educating us engineers on the benefits of HDPE and its applications."

HDPE is ideal for HDD because of the balance of its physical properties: flexibility, strength and fusion welded joints. Flexibility allows it to be drilled through the earth making bends necessary to maintain the bore path. Second, the incredible strength makes HDPE capable of handling the stresses HDD requires. Last, the fusion welded joints allow the pipe to bend without the threat of deflecting a joint too much and causing a leak. In addition, DR-11 HDPE pipe rarely deflects during HDD and stays round even when going through a bend.

Custom wall anchor restraints were also supplied by ISCO, as were fittings that were written in for HDPE specifications. To further ease Corps concerns, an ASTM-C828 gravity sewer air test was also adopted for testing the materials. To ensure that the project would run smoothly, ISCO also supervised the first five welds during installation.

The pipe was installed successfully without disruption or incident to the environment and the water crossing.

"ISCO has been instrumental in educating us engineers on the benefits of HDPE and its applications," said Andrew Vane, P.E.



Pipe onsite being fused to get ready for installation via horizontal directional drilling.



ISCO onsite providing technical support.