

Brightwater East

Kenny/Shea/Taylor, a joint venture of Wheeling, IL, was awarded the \$131 million contract in late 2005 to build the east section of the Brightwater treatment plant's conveyance system.

Tunnel boring machine "Luminita" completed its 14-month underground journey from Bothell that began in September 2007. The concrete lined tunnel created is 14,000 feet long and approximately 18 feet in diameter. The tunnel lies about 260 feet below the surface at its deepest point.

The tunnel contains two pipelines that will carry untreated wastewater to the Brightwater plant for treatment when it comes online in 2011. The tunnel also holds a separate effluent pipeline to take highly treated wastewater to a deep-water outfall in Puget Sound, and a separate "purple pipeline" for reclaimed water.



High production equipment



"This lightweight material was pumped from a single access shaft."

The Four Pipeline System

Application:

Tunnel Backfill

Product:

Geofill® LD

MixOnSite of Buffalo Grove, IL was awarded the \$7 million contract for the production and placement of 70,000 cubic yards of Geofill Low Density Cellular Concrete used to backfill the tunnel. High production batching equipment utilizing colloidal mixers was used to produce the material onsite. This lightweight material (50 PCF / 500 PSI) was pumped a distance of almost 3 miles from a single access shaft to backfill the entire tunnel from within the 84" pipe. The material was placed in lifts to eliminate any possibility of floatation. "This project was challenging due to the difficult access and tight schedule," said Ed Weiner, President of MixOnSite. Due to the existence of fiber optic cables within the tunnel, temperatures of the grout were closely monitored and controlled.

All of this work is part of the \$1.8 billion Brightwater project to build a treatment plant, 13-mile conveyance system, and a marine outfall north of Seattle by 2011.