



Intake and Pump Station

**PROJECT PROFILE  
CONSTRUCTION**

**CLIENT**

**Missouri American Water, Inc.**

## **HIGH CAPACITY RIVER INTAKE SYSTEM**

New Jefferson City, MO

**SITUATION:**

An additional high capacity, 8.5 MGD, river intake raw water supply was required. Traditional intake structures would create a hazard to barge traffic on the river. The proposed pump station site was small and behind a frequently used railroad track directly along the river bank. The design could not be finished without input from the construction team.

**SOLUTION:**

A CMAR, Construction Manager At Risk, delivery mode was utilized to allow design and construction to progress simultaneously. Layne was experienced in the open face shielded tunnel method, and used this method to mine a horizontal tunnel 200 feet through bedrock to a point under the river. This tunnel carried the two intake pipes to the wet well shaft, passing under the railroad tracks.

Using Layne's marine capability, vertical rock shafts were drilled down in the wet from barges to intercept the horizontal tunnel. The intake vertical pipes and screens were inserted by divers and grouted in place. The intake screens were set at an elevation below barge traffic.

Extensive site work was performed prior to starting the wet well construction. Approximately 10,000 cubic yards of material was excavated, loaded, and hauled off site to make room for the new pump station facility. The process equipment included in the project included 4 vertical turbine pumps, 2 sludge pumps, 1 hydroburst system, and 2 wedgewire intake screens (located in the river).

**SERVICES EMPLOYED:**

- + Intake Construction
- + Pump Station Construction
- + Tunnel Construction
- + Marine Construction

