

# EID at Work—Replacing the Motherlode Force Main



Clockwise from top left. (1) New 20-inch diameter PVC pipe at the staging area. (2) Six-foot-deep trenches will hold the pipe. (3) The pipe goes in—160 feet of it per crew on good days when work isn't slowed by the need to cut through hard "green-stone" rock. (4) At the job site: EID senior engineer Mike Brink, left, and EID construction inspector Calvin Pratt.

If you're traveling on Mother Lode Drive between Buckeye and Greenstone roads, you'll surely notice construction in the eastbound lane of the roadway. Because one lane of traffic is closed, you may have time to take a close look at the work in progress.

EID is replacing more than a mile of the Motherlode force main, one of the district's primary pipelines for collecting and conveying wastewater to the treatment plants. "It's a big job," says Mike Brink, EID senior engineer. Brink is managing this part of the multi-year project to improve the Motherlode system, which consists of more than 8 miles of larger mains and smaller lateral pipes stretching from El Dorado to Cameron Park. "At 32 years of age, this is a relatively old system located in challenging terrain and in need of a lot of maintenance," he explains. "We're replacing the most vulnerable portions of the system to ensure the safest and most cost-efficient operation possible."

Brink adds that in this two-phase project, "We're first installing more than 6000 feet of new pipeline along Mother Lode Drive where hydrogen sulfide gas severely weakened the existing pipe. We should be finished by mid-December, and then we'll put in another 1700 feet along Durock Road at Business Drive in Cameron Park. That work is required to make way for a county transportation department improvement project where we're required to move our pipe. It's an opportunity to upgrade another stretch of corroded force main."

The contractor's bid for construction was just under \$1.7 million, "a good price," says Brink. "Largely because of the economic downturn, bids for this job were very competitive, coming in under the initial engineering estimate of \$3.1 million." As with all major capital improvements at the district, this project is funded by monies stemming from bond issuances.

While district crews did field work—such as potholing to locate underground infrastructure—during design of the project and while Brink and EID construction inspector Calvin Pratt are both regularly at the site, the actual construction is the job of Teichert Construction, the low bidder for the project. "We don't have the equipment or personnel for this kind of construction," Brink explains. "But by doing the prep work, project management, and inspection in house, we save thousands of dollars."

Pratt, who has more than 23 years of experience in the construction field and has been at the district for six and a half years, is responsible for ensuring the work meets district and county standards, which are based on state requirements and industry best practices. "We're in a county easement here," Pratt points out, "and that means we're also working in cooperation with the county's transportation department. This project is an example of a public and private partnership that's a benefit to EID's customers."

Past and future improvements to the Motherlode are part of the district's long-range plan to keep its extensive wastewater collections and treatment systems operating reliably. The systems include 64 lift stations, 550 miles of sewer line, 7500 maintenance manholes, and 4 treatment facilities. The El Dorado Hills and Deer Creek wastewater treatment plants produce recycled water to irrigate commercial and public landscapes as well as front and back yards at more than 3500 homes.