

## Project helps city stay ahead of treatment needs

## Successful project meets wastewater treatment growth needs

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ALABASTER, Ala. — Growth. Many cities want it, but not all are prepared for its impact on their infrastructure, particularly their wastewater treatment capacity. Alabaster, Ala., is a city that recognized the impact of expected growth and planned ahead.

Alabaster is one of the fast growing communities in Shelby County,

a day, 7 days a week. A Grade 4 operator must be present during the day, and a Grade 2 or better must be present at night, with a Grade 4 available on call. This resulted in implementing three operator shifts. At the heart of the expansion is a plant-wide SCADA system, provided by Revere Control Systems of Birmingham, Alabama. This system consisted of two operator monitor stations (PCs) running Wonderware HMI software, five Allen-Bradley SLC 505E PLCs, and numerous field

quality achieved by the plant, as the water we discharge to the creek is a better quality level than the water quality upstream of the plant.

The \$10 million project was bid April 30, 2002, and was started a couple months later. The project took 18 months to complete. Through the entire project, we experienced only one change order, and that was initiated by the city when we asked for a new lab building that would allow us to do more testing in order to reduce outside test expenses.

In a project of this size, that absence of change orders is nearly unheard of and is testimony to the quality of work done by both Revere Control Systems and the contractor, P.F. Moon of West Point, Georgia. Both firms did an excellent job of co-

ordinating the timing throughout the project, producing a very smooth project from start to finish.

The Revere project people in particular were excellent to work with. They often put in long hours working with our plant employees to assure that everyone was fully trained on how to operate the system.

If project success is defined as finishing on schedule, within budget, and without change orders, then the Alabaster wastewater treatment plant expansion certainly qualifies as a complete success.

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A view of the clarifier at the Alabaster, Alabama wastewater treatment plant, located in one of the fastest-growing counties in the country. Revere Control Systems photo

the fastest growing county in the state and regularly ranked among the 20 fastest-growing counties in the US. With a 2000 census count of 24,936, a 2005 estimate of 26,100, and a 2010 projection of 27,900, the city is expanding at a pace equal to approximately 300 homes per year.

Additionally, business growth efforts by the city's administration over the past five years have netted new commercial developments totaling about 750,000 square feet, with another 450,000 square feet of development underway.

Recognizing the need for corresponding growth in wastewater treatment capacity, the city approved a major expansion to the existing 3 mgd facility, built in 1990 along Buck Creek in the city's center. The expansion added 4.6 mgd of capacity with two aeration ditches, two clarifiers, filters, a new sludge press, and replacement of the old UV disinfection system.

Along with the expansion in plant capacity came an expansion in staff size. Alabama Department of Environmental Management rules state that when a plant's capacity reaches 5 mgd, the plant is required to have a certified operator on duty 24 hours

instruments to monitor level and flow. There are six Allen-Bradley VFDs to control the motors for the two plant lift stations.

Back-up bubbler panels are provided for each lift station in case the ultrasonic level detectors were to fail. In addition to providing for the new treatment train, PLC panels were provided for the original train to allow all of that equipment to be included in the new control system.

With the control system providing constant monitoring of performance of each stage of operation, aerators and mixers can be automatically turned on and off. It is also possible from the operator positions to override automatic operations if necessary. Overall, the SCADA system provides us with better knowledge and control of plant performance, yielding a more consistent performance than our old method of manually checking instruments periodically and manually making adjustments.

Treated water from the plant is discharged into Buck Creek, a small waterway that winds through the city and runs adjacent to the plant. Our monitoring and testing of discharge demonstrates the consistent

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