City of Baldwin
WWTF Treatment Enhancements for Phosphorus Reduction
Habersham County, Georgia

Services Provided:

Program Management
Operations Assistance

Project Data:

Enhancements at the WWTF

Total Project Cost:
$15,000

Date of Completion:
October 2018

Contact:

City of Baldwin
The Honorable Joe Elam, Mayor
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Baldwin, GA 30511
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In August 2018, Georgia EPD issued a draft permit for the reissuance of the NPDES Permit for the City of Baldwin's WWTF. Within the permit was a reduced Total Phosphorus (TP) limit from 1.0 mg/L to 0.5 mg/L. The City had 24 months from issuance of its permit to comply with the new limit. At the time, the City was in compliance with their current TP limit; however, the effluent TP was frequently above 0.5 mg/L. The City would need to provide enhancements at its WWTF in order to comply with the new TP limit, and comply within EPD's required schedule.

The City had recently raised its sewer rates in order to offset the costs of a recent sewer system improvement project, and was reluctant to increase rates again for additional debt service for improvements to the WWTF in order to meet the reduced TP in the permit.

The City requested the engineering and operation consulting services of EMI to provide a solution to both comply with EPD's new permit limits within EPD's required compliance schedule, and to minimize additional costs to the City.

Initially, it appeared that the City would need to install two additional clarifiers and an additional filter in order to meet the new reduced TC limits. These improvements were estimated to cost in the range of $2.5 million to $3.0 million. EMI staff continued to explore other options, and found an alternative solution that would provide a dual-feed chemical addition system that dosed chemical into two separate locations at the facility that allowed the facility to effectively remove stubborn phosphorus particles and meet the new limits. This system was installed in October 2018, and the City was able to operate within its new permit 27 months prior to the EPD compliance deadline. The cost of the dual-feed chemical system was $15,000.

Since installation of the chemical feed system, the WWTF has achieved average effluent TP values of under 0.2 mg/L. EMI was able to provide the City with a solution with project costs substantially lower than the initial project design, and well within the EPD compliance deadline.