

**NAME:**

Bear Creek Wastewater Treatment Plant

**LOCATION:**

Henry County, Ga.

**PLANT SIZE:**

1.25 mgd

**INFRASTRUCTURE:**

Gravity sewer line; pumps; headworks; 2-million-gal holding tank; two SBRs; 14-million-gal holding pond; two aerobic digesters; 1.5-m belt press; and SCADA system



Submersible pumps send flows to the plant's headworks.



The work of new SBRs is one part of the intricate process that treats wastewater at the newly expanded HCWSA Bear Creek WWTP.



Effluent flows into the retention pond before being pumped out for spray irrigation on protected green space adjacent to the facility.



The WWTP expansion and upgrade project spanned two years and cost \$14.5 million.

**PLANTPROFILE**

By Caitlin Cunningham

# Added Flex

*A Georgia WWTP boosts capacity by 1 mgd to meet growing demand*

Georgia's Henry County Water & Sewerage Authority (HCWSA) opened its Bear Creek Wastewater Treatment Plant (WWTP) in 1997, with the facility operating at a capacity of 0.25 million gal per day (mgd).

Located in southwestern Henry County, Ga., the WWTP serves hundreds of homes and businesses in an approximately 10,280-acre drainage basin in Henry County. Many forecasts predict that the county area will double in population within the next decade. Additionally, Bear Creek WWTP has taken on flows once handled by HCWSA's now inoperative Hampton Industrial Park facility, and it treats wastewater for its utility's largest commercial account—the Atlanta Motor Speedway.

"With more than 100,000 guests descending upon the area during any given race event, the challenge to manage and treat peak flows into the Bear Creek plant has become increasingly difficult," said Jason Jeffares, manager of water pollution control for HCWSA.

Recognizing the need for increased size and flexibility, the HCWSA recently completed a two-year, \$14.5-million expansion and upgrade project at the Bear Creek plant. New infrastructure is now in place to support an additional 1 mgd of treatment capacity. At the time of publication, the plant was undergoing expansion testing and on the verge of being fully operational under a pending Georgia Environmental Protection Division permanent operating permit.

"We are approaching the end of a long and challenging process to bring a major WWTP from design to construction and into final operation," said Lindy Farmer, general manager of HCWSA. "This is a major milestone among our master plan of capital improvements, designed to increase capacity and improve the flexibility of our wastewater system."

**New Treatment Process & Add-Ons**

Sewage enters Bear Creek WWTP via a gravity sewer line, and Flygt submersible pumps transport incoming flows to the headworks for removal of trash, debris and grit. During peak flow periods, raw sewage can be diverted at this point to a 2-million-gal holding tank for treatment at a later time.

Next, two Aqua-Aerobic sequencing batch reactors (SBRs) treat the wastewater. After going through the SBRs, the treated water is sent to a 14-million-gal holding pond, from which it is sprayed over 165 acres of local land.

Sludge from the facility goes on to receive additional treatment in two aerobic digesters. The sludge is then dewatered using a 1.5-m Ashbrook belt press, and the biosolids are applied to agricultural land.

Three certified operators maintain Bear Creek WWTP and its spray fields seven days a week. As part of the facility expansion, HCWSA added a new process control lab, allowing these operators to conduct process control tests on site. A new SCADA system was incorporated as well to provide

around-the-clock monitoring for alarms.

"One thing I feel makes Bear Creek unique is expanding the plant from just 0.25 mgd to 1.25 mgd," Jeffares said. "This is the first expansion and upgrade that the Bear Creek facility has had since it opened in 1997. It gives our authority a lot of room for growth in the area. Also, having a 2-million-gal holding tank at the headworks allows us to handle very high peak flows like those seen during race weekends."

**Countywide Progression**

In all, the HCWSA operates four wastewater treatment facilities:

1. Bear Creek WWTP, profiled above.
2. Designed to process up to 2 mgd of wastewater, Springdale Road WWTP hosts a 13.2-million-gal treated wastewater holding pond with 2,066 corresponding spray heads for irrigation.
3. The 1.5-mgd Indian Creek Water Reclamation Facility (WRF) is equipped for an easy expansion to 3 mgd, and ultimately, the design allows for it to be built to treat 12 mgd. This facility features an 18-million-gal holding pond and 1,329 spray heads.
4. Walnut Creek WRF, which has been dubbed "the backbone of the sewerage system" in Henry County, currently is capable of handling 4 mgd and hosts a 48-million-gal holding pond that is linked to 4,100 spray heads. In early 2009, HCWSA began construction to double Walnut Creek WRF's treatment capacity and increase its pond storage volume and irrigation capabilities.

The authority is also implementing an aggressive capital improvement program to renew and replace aging infrastructure in the 32 lift stations and roughly 400 miles of collection sewers it operates.

"This was a rural system when I started 28 years ago," Farmer said. "As we grow, we try to take advantage of good advice we've gotten from other utilities, and hopefully in this industry we share information that helps others." WWD

Caitlin Cunningham is associate editor for *Water & Wastes Digest*. Cunningham can be reached at 847.391.1025 or by e-mail at [ccunningham@sgcmail.com](mailto:ccunningham@sgcmail.com).

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