Cover Story

Prescription watering is key for cotton production
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Telemetry cuts water treatment costs at Inland Bays facility

When Loran George goes swimming in the Atlantic Ocean near his Delaware home, he knows it's cleaner and safer thanks to his work at the Inland Bays Regional Wastewater Facility in Millsboro, Del. Opened in 1992, Inland Bays was one of the first wastewater treatment facilities in the area not to stream discharge effluent. Instead, Inland Bays uses two Zimmatic center pivots equipped with AIMS Advance and Zimmatic Telemetry Network to irrigate 200 acres of farm ground with treated wastewater. Loran worked with Zimmatic dealer, Sussex Irrigation, in Laurel, Del., to design the two pivots and control systems.

According to Loran, Inland Bays district manager, this land application process has helped greatly reduce the nitrogen loading of local waters from the area's septic systems. Inland Bays serves 5,000 homes from 18 Delaware communities. The Sussex County Council, which owns the $5.2 million facility, estimates that the Inland Bays facility has kept 51,000 pounds of nitrogen, 20,000 pounds of phosphorus and 18,000 pounds of potassium from entering the bay.

Through a series of three aeration treatment lagoons and two chlorine treatments, Inland Bays is capable of treating 1.46 million gallons of wastewater a day. Currently, daily loads average up to 700,000 gallons per day.

**Room to grow**

And as the area grows, there's room for the Inland Bays facility to grow too. "We've got options on another 400 acres of cropland," he said. And there's plenty of capacity left in the treatment plant as well. "Our largest day has been 900,000 gallons—our capacity is more than 1.4 million gallons," he said.

The facility includes a 32 million gallon storage lagoon that holds the treated water until it can be sprayed on the crop fields. "It can hold up to three months of treated water," said Loran. This is especially helpful during the winter months when less water is used for irrigation.

On average the Zimmatic center pivots are running eight hours a day and up to 14 hours a day in the summer. "We spray the treated water on crops harvested for chicken feed," said Loran. He said the feed—including corn, winter rye and soybeans—is grown for a local poultry producer.

**Growing crops, reducing pollution**

Not only does this land application process reduce pollution and help grow crops, but it's also more efficient than stream discharge, Loran said.

"There's much less staffing needed for a land application facility," he said. "Stream discharge facilities have to clean the water much more, which takes more equipment and more time. We use the soil and the plants to filter out any remaining pollutants."

**Telemetry saves overtime pay**

And thanks to Inland Bays' AIMS Advance and Telemetry, the operation is even more efficient. "Telemetry saves me at least two hours a day," Loran said. "It's saving the county a lot of overtime."

Before he started using the Telemetry system this year, he would have to make two trips to the plant every day during the weekends to turn the systems on and off. Each round trip took Loran about an hour. "Now I can turn the center pivots on and off from my house," he said.

Telemetry also helps save his valuable time during the work week. Loran said he used to make a trip out to the pivots every one or two hours. Now he just stops by his office periodically and checks his computer. "I just bring the pivots up on the screen and with a click of the mouse I can check the status of the system," he said. "It's been a tremendous help—a real time saver."

And time is one of Loran's most valuable resources. As district manager he is responsible for all the administrative and
managerial aspects of running the facility. He supervises a staff of six and is responsible for sampling, testing and running the irrigation systems.

"Telemetry really enables me to make the best use of my time," Loran said. "It's state of the art, top of the line control. It helps cut costs all around, which keeps the rates lower for our customers."

Loran said he also uses his Zimmatic telemetry network to help him keep records of facility operations. "I keep daily, weekly, monthly and annual reports for the county and the state," he said. Loran uses the telemetry network to record run times and hours of operations. "In the future I plan to also monitor flow rates," he said.

Through his AIMS panel, he also programs his pivots during the winter months to run dry over areas that tend to pond over. "I'm not using the programs to their fullest extent yet," he said. "I know there's a lot more that can be done."

And when Inland Bays grows to utilize it's full capacity, there will be a lot more to be done. Thanks to telemetry network and his Zimmatic irrigation system, Loran should have enough time to handle the increased work load.

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**FYI**

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