Irrigation Advances

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Cover Story

IBP relies on innovative land application solution

PG. 4

Hanging plastic pipes growing in popularity

PG. 9

Zimmatic
Conserving water, energy, and labor
When IBP opened its first plant in 1961, it represented an entirely new and innovative approach to processing and packing fresh meat. More than 35 years later, IBP relied on that same innovative thinking to resolve a waste water challenge at its pork processing plant in Madison, Neb.

A little more than a year ago, the Madison plant faced stricter State limitations on the quality of water the plant could discharge into a local stream. To comply with the new rules, the company faced a major question: Do they invest the capital and long-term labor expenses for a permanent water treatment facility, or is there a better, more environmentally-minded option?

After approaching the nation's major automated irrigation companies for a possible solution, IBP selected Lindsay Manufacturing Co. to help them design a high-tech land application solution that would eliminate the need for the treatment plant, meet quality standards, maintain detailed records, as well as benefit local farmers.

"This has been a great project," said Mel Olmer, plant engineer and 25-year IBP employee. "I never imagined it would be this good."

As plant engineer, Olmer is responsible for the overall operation and maintenance of the plant, which processes more than 7,100 hogs daily. His job includes managing a staff of about 80 employees.

What Olmer is so thrilled about can be very simply described as an irrigation water network involving IBP and seven local farmers.

**Here's how it works**

After the process plant water is treated through a series of seven lagoons, it is...
pumped through a large diameter underground pipe to 12 privately-owned pivots. Each pivot, including three existing competitive pivots and nine new Zimmatics, is equipped with an AIMS Advance control panel. Pivot operations and functions are monitored through a Zimmatic Telemetry Network, currently based at the IBP pump house. Plans are underway to install an additional computer at the IBP maintenance office at the plant.

Filtered water is pumped at a rate of up to 4,800 gallons per minute, as far as three miles, by a combination of five electric pumps. Each pivot runs at about 850 gallons per minute.

According to the agreed irrigation schedule, six pivots are always running as long as field conditions allow. Each start time is staggered by 15 minutes so there is properly controlled pressure delivered to each system, according to Olmer. Each grower controls the operation of his pivot or pivots through the AIMS Advance programmable control panel.

This schedule has worked well during this first season of the project, according to Olmer and Terry Pfeifer, one of the project’s seven farmers. Pfeifer’s

**KEY POINTS**

- The Madison, Neb., IBP plant processes more than 7,100 hogs daily and uses ten million gallons of water every week during processing.
- IBP’s series of treatment lagoons can store up to 340 million gallons.
- The 12 pivots are connected through Zimmatic’s Telemetry system which helps maintain usage records and monitor operations from IBP’s pump house.
- Six pivots are always running as long as field conditions allow.
- The irrigation project cost IBP about one-half of the projected costs of a new treatment plant.

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“T’m just tickled with it. We get free water, with no pumping costs, just for properly maintaining our pivots.”

*Terry Pfeifer*

Zimmatic Dealer is Peterson Agri Sales in Osmond, Nebraska.

“I’m just tickled with it,” Pfeifer said. “We receive free water with no pumping costs, just for properly maintaining our pivots,” he said.

Pfeifer, who could access wells for his irrigation water, farms 1,700 acres of corn, soybeans and some alfalfa, as well as 500 custom farmed acres. However, his water situation is an exception among the group. Most growers, according to Olmer, did not have access to any water and could not irrigate before this opportunity developed. “They just couldn’t find water,” he said.

**New lagoon adds storage**

As of early August, more than 156 million gallons of treated water had been applied through five or six irrigation applications, Olmer said. The entire IBP treatment system, which cleans water through a series of anaerobic and aerobic lagoons, has a capacity of 340 million gallons of storage. The construction of a new 60-acre lagoon, which can hold 180 million gallons, was a major part of the project.

To help make sure the water is used adequately, each grower is under contract to apply between six and ten inches of irrigation water per pivot each season. At that rate, no storage problems should develop, according to Olmer. “This way we can store for eight months and pump for four,” he said.

But the farmers aren’t the only ones to benefit. IBP benefits because it knows the ten million gallons of water it uses every week, will now eventually be used to grow crops and no longer be discharged, said Olmer.

“This project is really a double whammy,” he said. “We benefit, and the farmers benefit. And the water isn’t just getting a single use anymore.”

It’s also saved IBP money and labor. According to Olmer, the irrigation project cost them just about half of what it would have cost to build a treatment plan. “And that doesn’t include upkeep of the plant or the staffing costs to run it,” he said.

“It only takes one part-time man, over three to four months to run the irrigation,” Olmer said. “But it would have taken a staff of at least three full-time employees to run the plant all year long.”

Some additional time savings result from no longer having to send weekly (continued on page 6)