Wastewater Goes Back To The Land

Zimmatic® irrigation systems come from a strong farm background, but many have found a new home in wastewater disposal operations.

Municipalities as well as privately owned concerns are finding that Zimmatic systems can be economical tools for wastewater disposal. Properly managed, the systems can apply wastewater with the control needed to ensure environmental safety. In fact, they often improve the disposal area's environment.

Following are two profiles that demonstrate the versatility of Zimmatic irrigation systems in different types of operations.

McCain Potato Processing Plant, Othello, Washington

Zimmatic pivots have proved their worth to John G. Lallas, McCain's wastewater treatment and disposal manager.

Lallas oversees an 800-acre operation. In addition to eight pivots, wheel line and hand line systems are used to handle the wastewater from the potato processing plant. After going through a primary treatment process which includes solids removal, the wastewater is discharged at alternating locations over the site. Land application is done virtually year-round.

Lallas reports less runoff with the pivots compared to the other systems. "With a center pivot, you can nozzle correctly to take care of a runoff problem," he says.

Two of the Zimmatic pivots were put up in 1990. They replaced 18 wheel lines, and have required only a fraction of the man hours formerly needed for labor, Lallas says.

Lallas adds that the pivots are "easier to manage from a maintenance standpoint. Wheel lines can blow away in high winds." The two newer Zimmatic systems have required "little or no repairs" since their installation, he notes.

For the design of those systems, Lallas relied heavily on the expertise of the Lindsay dealership in Othello, Sargent Pump and Irrigation. The pivots were specially equipped for such conditions as acidic wastewater, cold-weather operation and extremely uneven terrain. Nozzles were selected to handle high wastewater application rates with no runoff or wheel rutting.

"We were able to take an assortment of equipment available through Lindsay and select the equipment that best suited their (McCain's) needs," says Jim Finkbeiner of Sargent. "We were given the ability to install a very high level of quality."

City Of Seminole, Texas

Revenue-producing crops cancel out wastewater disposal expenses at the City of Seminole's land application site.

A Zimmatic center pivot is used to distribute wastewater over 60 acres. Installed in 1987, the system runs in a half circle due to limited space, says Gary Duncan, the city's assistant director of public works.

The pretreated wastewater, which contains basic plant nutrients, is used to irrigate and fertilize. Wheat and milo are double-cropped under the pivot. The land is custom-farmed for the city.

Sale of the crops brings the city $20,000-$25,000 annually, Duncan says. Expenses associated with land application amount to $18,000-$20,000.

"We normally run under budget," Duncan notes.

Wastewater is pumped to the pivot from a lagoon less than a mile away. Duncan estimates that 500,000 gallons of wastewater flow into the lagoon each day. Seminole's population numbers more than 6,000 people.

Prior to the pivot's arrival, the chief method of wastewater disposal was evaporation from the lagoon, Duncan says. However, increasing wastewater volumes forced the city to look for "a way to pump some of it out," he adds. "The Zimmatic pivot seems to be the best way for us," Duncan says. "It works great, and we've had very few problems."