

Improving Irrigation ROI

THROUGH EFFICIENT PUMPING SOLUTIONS



Saving Energy, Water and Labor

When fourth-generation Othello, Wash., farmer AJ Ochoa decided to upgrade his irrigation and water pumping system, he turned to a team of professionals from Lindsay and its subsidiary Watertronics, to help design and install one of the most efficient and fully-integrated pump and center pivot water control packages in the world. The result: immediate energy, water and labor savings.

Ochoa converted nearly 1,000 acres (405 ha) of flood irrigated land to land irrigated by eight center pivots, all controlled from a single location and a new Watertronics agricultural pump station. Three 100 horsepower (101.38 metric hp) pumps are used to supply water to those eight pivots, including one located more than a mile away.

All of the pumps are located at a central pump station and equipped with

Watertronics Variable Frequency Drive (VFD) and Electronic Butterfly Valves for maximum efficiency. The pivots are equipped with Lindsay's FieldNET™ Web-based irrigation management system, which allows Ochoa to access a single online portal to monitor and control his entire pump and center pivot system.

The advanced Lindsay/Watertronics controls are also available as an upgrade to any existing pivot or pump station.

The Ochoa family, including AJ, his father and grandfather, have worked closely for years with Lindsay's local Zimatic dealer, Irrigation Specialists of Othello, Wash., for their irrigation needs. When AJ Ochoa decided to upgrade his irrigation and water pumping station, he turned once again to Irrigation Specialists for assistance.

FIELDNET WITH PUMP CONTROL

AJ Ochoa's irrigation and water pumping station includes Lindsay's FieldNET wireless irrigation system, which allows Ochoa to access a single online portal to monitor and control his entire pump and center pivot irrigation system. This integrated solution provides information that allows Ochoa to monitor and maintain each pump for peak performance.

FieldNET automatically tracks and reports start-ups and shutdowns and sends Ochoa alerts for any disparity of normal operations, such as flow alarms.



ROI SUMMARY

- 1,000 acre feet, or 325 million gallons (1.2 billion liters) – projected annual water savings
- 13,000 man hours per year – projected labor savings
- The advanced Watertronics control technology can save as much as 25 percent on energy bills
- Energy savings rebates possible from local utility providers

FAST FACTS – GREEN POINTE FARMS

- Fourth-generation Othello, Wash., farmer
- Raises potatoes, corn, alfalfa, wheat, edible beans and bluegrass seed
- AJ Ochoa's operation is located in the Columbia River basin and consists of 10,000 acres
- Converted nearly 1,000 acres (405 ha) of flood irrigated land to center pivot irrigation
- Eight Zimmatic center pivots
- Three 100 horsepower (101.38 metric hp) Watertronics Vertical Turbine pumps
- Up to 6,600 gallons (24,984 liters) of water per minute



Watertronics customized pump stations for agriculture come equipped with automated control and monitoring technology – all at the touch of a finger.

AJ Ochoa (left) with Steve McCabe of Irrigation Specialists, Lindsay's local Zimmatic dealer, are shown at the pump system control panel. Variable Frequency Drive and Electronic Butterfly Valves on Ochoa's pump station save energy and provide near-perfect water pressure regulation.

CHALLENGE

AJ Ochoa wanted to upgrade his flood irrigation to center pivot irrigation and add a new pump to draw water from canals and groundwater sources. Ochoa originally considered installing a 250-horsepower (253.5 metric hp) pump to supply water to his eight new center pivots.

He turned to Lindsay for recommendations on a simple, yet high-tech system to maximize his energy, water and labor savings.

SOLUTION

An integrated team of center pivot and water pump specialists from Lindsay and Watertronics worked with Ochoa to design a fully-integrated pump and center pivot water control package.

Lindsay provided him with a custom turnkey irrigation solution, mapping out his fields, routes for water and electrical lines, and locations for the pivots.

Lindsay prepared detailed estimates on projected energy, water and labor savings. The project required removal of old water canals, dikes and berms, new water and electrical lines, installation of the eight

pivots, and engineering and set-up of the Watertronics pump station and control technology.

The Watertronics pump station was equipped with Variable Frequency Drive and Watertronics' patented Electronic Butterfly Valves for maximum efficiency.



Instead of a single, large horsepower pump, Lindsay recommended Ochoa install three 100 horsepower (101.38 metric hp) pumps for variable demand needs and more efficient start-up. This recommendation was based on the ability to dynamically sequence the motors on the three pumps, which provides consistent water delivery and saves energy.

His pump station was pre-engineered and factory-tested prior to shipment. After arriving at Ochoa's farm, the Watertronics pump station was set into place, hooked up, and fully operational the same day. The entire system was installed in a few hours compared to what would normally take weeks if the pump station had to be assembled in the field.

RESULTS

The Watertronics pump station provided immediate and substantial reductions in energy, water and labor costs, according to Ochoa.

"The control station and pumps are extremely efficient. If I have only one pivot running, the station will pump only enough water and use only enough energy to supply that one pivot. If two or more pivots are running, the Watertronics system will turn on additional pumps automatically to meet demand," he says.

The result was a fully-integrated pump and center pivot water control package designed specifically for Ochoa's needs and local field conditions. The Lindsay/Watertronics-designed system is saving Ochoa energy, water and labor (see ROI summary).

SOURCE: AJ Ochoa Corp. and Watertronics, Inc.

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For more information, call toll-free 1-800-829-5300 or visit www.zimmatic.com

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