Big Savings

When AJ Ochoa, a fourth-generation Othello, Wash., farmer pushed one button to start his new Watertronics® agricultural pump station, he became one of the first irrigators in the world to reap the benefits of a fully-integrated pump and center pivot water control package. Even more important to Ochoa, he began realizing immediate and substantial reductions in energy, water and labor costs.

Working with an integrated team of center pivot and water pump specialists from Lindsay and Lindsay’s newly-acquired subsidiary, Watertronics, Inc., Ochoa recently converted 1,000 acres (405 ha) of flood irrigated land to land irrigated by eight center pivots, all controlled from a single location by a new Watertronics agricultural pump station.

“The energy, water and labor efficiencies of the new system are amazing,” Ochoa says. “Originally, I had been looking at installing one 250-horsepower (253.5 metric hp) Variable Frequency Drive (VFD) water pump, but now I realize that was like dealing with technology from the past. The Watertronics pump station is extremely high-tech and yet simple to operate.”

Watertronics, based in Hartland, Wisc., is a manufacturer of automatic packaged water pump stations, control panels and telemetry systems. According to Watertronics president Rick Reinders, the company specializes in Variable Frequency Drive control packages and the company’s patented Electronic Butterfly Valve (EBV) pressure control.

“Our pump stations and control packages are ideally suited for the agricultural market,” Reinders says. “Watertronics and Lindsay have teamed up to provide growers a fully-integrated pump and pivot control package, which is the first of its type in the industry.”

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

AJ Ochoa’s farm is located in the Columbia River Basin and consists of 10,000 acres (4,046 ha) of potatoes, corn, alfalfa, wheat, edible beans and bluegrass for seed irrigated by eight Zimmatic center pivots drawing water from canals and groundwater sources. Three 100-horsepower (101.38 metric hp) pumps are used to supply water to the eight pivots, including one pivot located more than a mile away from the Watertronics pump station.

All of the pumps are housed at a central pumping station and equipped with the Watertronics

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**WATERTRONICS CUSTOMIZED PUMP STATION**
AJ Ochoa Farm, Othello, WA

<table>
<thead>
<tr>
<th>Projected Annual Water Savings</th>
<th>1,000 acre feet, or 325 million gallons (1.2 billion liters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected Annual Labor Savings</td>
<td>$120,000</td>
</tr>
<tr>
<td>Projected Annual Energy Savings</td>
<td>25 percent</td>
</tr>
</tbody>
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Watertronics control technology is also available as an upgrade to any existing pivot, pump or pumping station, including VFD control and single-phase to three-phase electrical conversions.

VirtualVision™III
Touch screen control with easy-to-understand interface programming and quickview color graphics

Variable Frequency Drive (VFD)
Specifically tunes pressure characteristics to each pump and combination of pumps in the system, ensuring near perfect pressure regulation.

Electronic Butterfly Valve (EBV)
Patented EBV complements VFD controls by pressure regulating each pump and provides 100% backup pressure regulation in the event of a VFD fault.

Continued >
The Watertronics pump control station is fed electrical power by a single, high-efficiency electrical transformer supplied by the local power company, Avista Utilities (see Avista story sidebar). Ochoa’s system is designed for a three-phase electrical hook-up although the Watertronics system is designed to work with single-phase wiring as well.

“The Watertronics control station and the VFD-equipped pumps are extremely efficient,” Ochoa explains. “If I have only one pivot circle running, the station will pump only enough water and use only enough energy to supply that one pivot. If two or more circles are running, the Watertronics system will turn on another pump automatically. I can pump 220 gallons (832 liters) to 6,600 gallons (24,984 liters) per minute off of the same system. It slows down or speeds up automatically to match the demand and that results in a huge savings of water and energy.

Lindsay’s local Zimmatic dealer, Irrigation Specialists of Othello, Wash., worked closely with Ochoa in setting up the Watertronics pump station. Irrigation Specialists’ Steve McCabe was amazed at how quickly the Watertronics pump station was up and running.

“The entire pump station was pre-engineered and tested at the Watertronics factory in Wisconsin,” McCabe says. “Then it was dismantled and shipped to Othello and installed in a few hours. The Variable Frequency Drives provide a very soft start and allowed AJ to start-up the system in a matter of seconds versus what would normally take days. The Ochoa pump station is truly ‘plug-and-play’ because it was all engineered and tested earlier at the factory.”

The eight pivots are equipped with Lindsay’s FieldNET™Web-based irrigation management system, which will allow Ochoa complete control over not only his pivots, but also his Watertronics pump station. McCabe noted that there is considerable interest in the Ochoa’s Othello operation. Local growers are stopping by to ask questions and Avista Corp. is analyzing how much energy is being saved as a result of the new Watertronics system.

Ochoa is already seeing the water savings. “We were using about 21 acre feet of water to irrigate the land previously. Now we are using about 14.5 acre feet for that same land. It’s an amazing system.”

Ochoa, who has been farming since the late 1980s, is assisted in his operation by his wife, Jodi, and their two children, Austin, age 14, and Callie, age 12.


**DYNAMIC SEQUENCING PUMP CONTROL**

Pump sequencing and dynamic pressure control provide consistent water delivery and save energy, as shown in this example. Variable Frequency Drive allows pumps to run in any combination from 0% up to 100% capacity. The pump sequencing also saves on system wear and tear.

Avista Utilities, a privately-owned energy company serving more than 335,000 electric customers in several western states, worked with Othello, Wash., grower AJ Ochoa in helping to install his state-of-the-art agricultural water pump station. The energy company is now interested in documenting the energy savings of the Watertronics system.

“Avista Utilities wants to help its customers to be as energy efficient as possible,” says Bill Pickett, Avista operations supervisor. “The Othello pump station is cutting-edge technology, from the highly-efficient water pumps to the control packages, including the Variable Frequency Drives (VFD) on the motor. Because the Othello operation has one pump station, Avista was able to install a highly-efficient, state-of-the-art electrical transformer at Ochoa’s farm to supply the electricity needed to run the eight pivots. Normally it takes up to one transformer per pivot, depending on the location of the other pivots.

“It appears the pumping station, especially the VFDAs, results in significant energy savings and we want to document it. Because the Watertronics pumps at the Ochoa farm are equipped with VFDs, they have a much ‘softer’ start which means less electrical demands on our system,” Pickett says.

Jerry Weight, regional account executive at Avista, says the utility offers rebates to qualifying customers for projects that save energy.

Check with your local power company to see if it offers similar rebates.

**MAIN BENEFITS OF WATERTRONICS PUMP STATIONS**

- **Customized**
  - Integrated pump and pivot control
  - Multiple irrigation system operation
  - Engineered system to save energy, water and labor

- **Delivered as a factory-assembled unit for fast installation**

- **Consistent water delivery**
  - Lower cost of production
  - Reduced energy costs
  - Simple monitoring and control to save time and labor

- **Higher yields through more uniform water application**

- **Immediate energy savings**
  - Surge-free pressure regulation
  - VFD matches pump output to demand

- **Consistent reliability**
  - Performance tested prior to delivery
  - Complete installation and service

- **Higher returns – save up to 25 percent on water and energy costs**

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**AVISTA UTILITIES**

Lindsay and Watertronics Team Up to Provide a Fully-Integrated Pump/Pivot Control System

Lindsay Corporation’s recent acquisition of Watertronics, Inc., based in Hartland, Wis., opens up a whole new avenue of controlling water resources. Watertronics has been in the pump business for 30 years and is a leader in designing, manufacturing and servicing water pump stations and controls for agriculture, golf, landscape, municipal and water conservation markets and supports pump stations worldwide.

Watertronics president Rick Reinders says Watertronics and Lindsay are now able to provide a fully integrated pump and pivot control package.

Reinders says integrating the irrigation water source (pumps) and the water distribution system (pivots) provides several benefits to growers.

Reinders adds, “The advanced controls are available as an upgrade to any existing pivot or pump system, so growers who don’t need a packaged pump system can still realize big energy, water and labor savings by using our proprietary electrical control panels and telemetry systems.”

“Watertronics pump and control technology is ideally suited for the challenges of the agricultural market,” says Chip Carlson, Watertronics chief operating officer. “Combined with Lindsay’s advanced FieldNET® pivot controls, we now deliver to growers what they have been asking for – full control of the irrigation water on their property.”

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**DEALER INFO**

Irrigation Specialists
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509.547.1761

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