

Project

Northend Equipment Farms

Six Trailer-Mounted Diesel Pump Station Operation



Project Name	Northend Equipment Farms
Country	Northend Equipment Farms is located in the Imperial Valley of California, USA.
General Description	<ol style="list-style-type: none">1. Project size: 600 acres total, 6 fields at 100 acres each.2. Type of project: row crops.3. Crop: Onions.4. Irrigation Method: Drip tape.5. Water quality/Water source: Canals.6. Inlet / Pumping Pressure: 22 psi.7. Flow data (Total and per irrigation set): 800-1200 gpm per block.
Installation Date	New installation, 2017
BERMAD Solution	<ol style="list-style-type: none">1. Water Availability.2. 1 - BIC2500 Controller, 7 Ultrasonic Canal level sensors, 6 Bermad Turbo-Bar Water Meters, 6 6"-123-59 Series Pressure Reducing/Sustaining, 14 6"-120-55 Pressure Reducing Valves, 14 Analog pressure transducers.3. Project value: US \$60,000.00
Project Story	<ol style="list-style-type: none">1. Scope of the project was to operate six trailer mounted diesel pump stations, which irrigated six lines 100 acres each line for a total of 600 acres. Farmer objective was to reduce the cost of labor, run their irrigation efficiently and always have water available to irrigate their crops on a farm, which has a distance of five miles.2. They installed a Bermad Comprehensive Irrigation Control & Management System automation controller BIC2500 to monitor and control their system and have the required information to control their irrigation 24 hours a day seven days a week. They installed ultrasonic sensors over the canals to monitor the level of their canals and order water for their water district as needed with time to avoid paying higher fees for last minute orders of water.3. They installed pressure transducers on each of their irrigation lines to monitor pressure going into their fields to stop the over pressurization of their drip tape, which use to cause leaks.4. They purchased Bermad Turbo-Bar water meters to monitor their water flow to ensure they were applying the right amount of water to their fields. They are operating manual diesel pumps that originally had Nelson manual sustaining/reducing valves operating on their systems, sustaining at 40psi (P1) and reducing to 18psi (P2) on the outlet. This caused problems for them on start-up because the valve would stay closed until it reached pressure 40psi (P1), then immediately open to 0 pressure on the outlet of the valve (P2), causing the valve to react and immediately close creating an oscillation at the pump station and causing the pump to lose its prime and shut-down.5. This process was repeated over and over at start-up. The Bermad solution was to install a Bermad pressure sustaining/reducing valve with an electrical override solenoid 123-59 and connect it to BIC2500 automation system and not have to sustain pressure at start-up stopping the oscillation. The controller would send the signal to the valve two minutes before it ready to backwash, giving it enough time to backwash properly.6. Irrigation valves were successful in opening and closing at a distance of five miles. The pumps are currently being started manually, but plans are in the works to fully automate their pumps starts with and electrical prime and pump start this year to fully automate their system.