Global Water Management, LLC

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James Taylor
Operations Manager

Wonderware Software Solution Helps Water Utility Meet Quality, Efficiency and Profitability Goals

Goals

- Provide ample water and meet county, state and federal quality standards
- Use less power, conserve energy and operate more profitably
- Reduce operator time spent driving to remote locations to save fuel and vehicle costs
- Improve measurement of treatment processes and gather historical and real-time equipment data for better preventative maintenance

Challenges

- Aggressive timeline required the new system to be operational within a few weeks
- Operations cover a 100-square-mile territory with eight separate facilities

Solutions and Products

- Wonderware® System Platform
- Wonderware InTouch® HMI
- Wonderware Historian Software
- ActiveFactory® Trending, Analysis and Reporting Software
- SCADAlarm™ Alarm & Event Notification Software
- Wonderware Information Server

Results

- The Wonderware software solution's standardization and repeatability resulted in quick development time
- Historical data and trending reports now are available to management for improved decision making
- Preventative maintenance has extended equipment life; power use is minimized and operations are more profitable
- Remote visibility saves operator travel time and has improved efficiency while reducing fuel and fleet maintenance costs

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Phoenix, Arizona – As the fastest-growing private utility company in Arizona, Global Water Management, LLC mission is to provide superior customer service, deliver high quality drinking water to residential and commercial customers, and maximize the use of recycled water within its service territories. Global Water ensures their customers use less potable water than typical consumers by conveying recycled water through a vast, automated distribution network ensuring their communities utilize this important resource a second time for non-potable uses, such as all outdoor irrigation. The utility considers both the citizens and the environment as its customers. This is especially imperative in the desert where it's possible to supply enough water for everyone – as long as this precious natural resource is carefully conserved.

And that's where Global Water makes its greatest contribution. The company is known for the progressive implementation of leading-edge systems that enable it to efficiently provide the right water for the right use as well as meet county, state and federal water quality standards, plus save energy and operate profitably.

The Global Water Wish List

One of the important factors in this reputation for innovation comes from the company's continuous evaluation of its operations. Not long ago, Global Water's management team developed a list of desired, additional capabilities. They wanted improved measurement of their treatment processes, better ability to recognize and correct possible quality problems before they occurred, and more comprehensive historical data to assist with management decisions. They recognized that if they could save power, they could also save money. Plus, because Global Water has dozens of operating facilities spread out over two 200+ square mile service territories, they envisioned decreased time driving between their locations, which would save on vehicle wear and tear, fuel costs and operator hours spent on the road.

Global Water contacted the local authorized Wonderware distributor, Wonderware West and CP Control Technologies, LLC, an Arizona systems integrator. The three entities formed a team that would work together to meet Global Water's list of needs.

Rapid Development and Deployment

Not only did Global Water have a clear vision of what they wanted the Wonderware software solution to provide, they also had an aggressive timeline. Four of the utility's sites needed to be deployed at the same time, and CP Control was asked to complete the project within weeks.

The Wonderware System Platform gave the system a firm foundation, including patterns to follow for standardization of the system design. I/O configuration from the PLCs, object modeling and graphics, tags and naming conventions were set from the beginning. Then they were also used by the developers and engineers who took responsibility for the system post-deployment.

Jeromy Peterson, CP Control Technologies' Chief Operating Officer, says, "After the up front investment in development, you get great time savings. It has allowed us to build in more features that Global Water wanted and still finish on time. From a developer's standpoint, it made us look pretty smart!" He continues, "We did triple the work in one-fourth of the time because Wonderware software's repeatability and deployment of objects makes development so easy."

On the strength of this standardization, the first site was completed in about a month, and the additional three sites came online within a week.

And, as Global Water's Wonderware software system has continued to evolve, the solution's store-and-forward capabilities have provided stability. When adjustments are made, store and forward safeguards data and helps prevent losses.

Seeing the Big Picture

Now that the system was in place, it was time to see if it could help Global Water's management to better process data for planning and performance measurement.

In some of the utilities recently acquired by Global Water historical data was not gathered at all, and the amount of current information that was collected provided a mere snapshot of the complex operations. Operators used hand-written log sheets and entered results into a monthly report. This made it difficult for management to identify trends and make forward-looking decisions.

But Global Water's vision combined with Wonderware software capabilities changed all that. The new solution gives Global Water engineers the ability to track multiple points of input and hundreds of data points in real time. Wonderware Historian and InTouch® HMI screen graphics organize this information and make it easily understandable, which has made operators more efficient and proactive. And the data can be trended over long periods of time to create better decision-making input for management.

According to James Taylor, Global Water Operations Manager, "The greatest benefit from our system is trending. We can understand what's going to happen, and we can address problems before they occur. It's the big picture we need to fine tune and solve complex problems."

The accurate reporting and trending that comes from the new Wonderware software enables Global Water operators to make use of KPIs, standardize their best practices, adhere

to EPA standards – and do it all efficiently. For example, data from the Wonderware solution shows when filters will need to be replaced. Backwashing and change-outs can be planned so that the system's performance is not disrupted. Reports also prove that water remains within EPA compliance standards for quality. COO Peterson explains, "Previously, we affected our KPIs with man hours, but now we can affect them with technology."

"Powerful" Cost Savings Now and in the Future

Power is another central consideration since it's a significant operational cost. For Global Water, the Wonderware software solution monitors the energy usage of all pumps, identifying those that may be malfunctioning. By performing preventative maintenance more quickly and improving the efficiency of the pumps, equipment life is extended, power use is minimized and Global Water realizes more cost savings and operates more profitably.

Taylor says that this is the basis for Global Water's future plans for the Wonderware system. "We've decided to implement power quality monitoring with Wonderware software in all of our facilities on a fast track. We will have it throughout our operations within the next year," he predicts. This will give Global Water the ability to monitor and track power usage, compare it to water supply and pump speeds, and track true metrics. Taylor continues, "The substantial cost savings go along with the ability to ensure compliant operations and maximize the ability to monitor our operations."

Compliance is the Key

The ability to track trends and monitor operations is essential for planning and proving compliance, but remaining within strict compliance guidelines at all times is also aided by the Wonderware solution. The Wonderware SCADAlarm™ capability enables Global Water to set alarms for customized conditions, see visual indications of system performance and notify operators of current conditions, no matter where they may be. This means that the company can adhere to stringent EPA mandates for water quality.

Peterson says that, above all else, compliance is Global Water's mission and that Wonderware SCADAlarm is his most useful tool for ensuring it. It enables the utility to affect changes immediately and maintain constant control, plus the solution is also easy to use. The alarm set points can be quickly updated whenever standards change, whether they come from the EPA, the state or the county.

Remote Visibility Provides Environmental Benefits

With the Wonderware solution, Global Water enjoys better visibility to its widespread operations and has made additional operational improvements. Screens in the control room of the main facility show all of the equipment, so the need for operators to drive out to pumps and stations is minimized, saving time as well as fuel, maintenance and wear on Global Water's fleet of service vehicles. And these results align with the company's environmental goals.

Successfully Fulfilling Multiple Missions

With this deployment, both Global Water and CP Control Technologies have achieved their objectives. As the developer, CP Control Technologies has built a new system that addresses the critical needs of the customer, including meeting the deployment schedule and the operational goals for improvement. And Global Water is benefiting from the Wonderware software solution's capabilities that facilitate the utility's pledge to provide clean, safe water to citizens, to meet environmental and compliance standards, and to do it all efficiently and profitably.