



# Badger Meter CONNECTIVITY

A Newsletter for Our Customers & Partners in the Industry

## BadgerMeter



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## Multi-Utilities Are Benefiting From Badger® ORION® and Innovative Communications

By Ted Schaar

When a combination of water, gas, or electric is supplied by one utility, the provider is sometimes referred to as a multi-utility. Multi-utilities offer two or more services and have more than one meter on customer premises to measure usage.

Powerline Carrier (PLC) and Data Communications Networks are among the technologies that allow multi-utilities to collect usage readings remotely, from two or more services at the same account.

With PLC, the power distribution grid that carries electricity is used to provide two-way communications between the meters and the utility office. The electric meter is the primary sender and receiver. Badger® ORION® transmitters send gas and water meter data to a receiver which is integrated into the electric meter, which sends it across the power grid.

Data Communications Networks employ a wireless approach. Advanced Metering Infrastructure (AMI) transceivers are installed on electric meters and transmit data one to another and then to a repeater. These electric AMI transceivers can also pick up the metering data broadcasts from the Badger ORION water and gas transmitters in the local area. Transceivers equipped with a Wide Area Network antenna sends the collected signals to a centrally located antenna. Data is then communicated to the utility billing system.

Three Badger Meter partners—Aclara®, Landis+Gyr®, and Tantalus®—develop and supply technologies that help make PLC and wireless two-way Data Communications Networks possible. ORION is flexible enough to work with the products of all three companies. This article reports on how customers of each company collect a combination of water, gas or electric usage data remotely, using ORION and either PLC or wireless two-way Data Communications Networks.

### PLC: Water and Electric

An innovative PLC and Badger ORION system is meeting the needs of a multi-utility in Kutztown, Pennsylvania. Located 110 miles west of New York, the community is home to Kutztown University of Pennsylvania, an institution of higher learning with a history stretching back to 1846.

A long tradition of extraordinary municipal services benefits the population of 9,500 students and 5,000 permanent residents. The Borough of Kutztown not only distributes water but also supplies electricity, cable television, high-speed Internet, and telecommunications.

In the late 1800s, the municipality even generated its own electricity. "The Borough had a coal-fired plant," recalled Director of Information Technology Frank Caruso. "Now we purchase power from an electric company and resell it, but we still have our own lines."

### More control sought

Kutztown's power distribution grid took on another role in 2003 after officials explored ways of improving the city's ability to collect water meter readings. "We looked for something that would give us control across the network and even at the meters themselves, and considered various approaches before selecting ORION® and TWACS®," said Caruso.

TWACS stands for Two-Way Automatic Communications System and is offered by Badger's partner Aclara. "TWACS allows us to send information to and receive information from electric meters," said Superintendent of Electric and Telecommunications Bruce Follweiler. "The electric meters in turn have several ports that are able to receive data from other sources, including the ORION transmitters on our Badger water meters."

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# Product Review

"A major motivation for selecting the ORION and TWACS system," Caruso emphasized, "is we are contemplating changing how we bill customers for services. In the not-too-distant future, charges might vary according to the time of day. For example, water and electricity will probably cost more when used during daylight hours than at night."

Caruso and Follweiler said the ORION® and TWACS® system might also permit Kutztown to adopt a new approach to how customers pay for utility services. This approach is already being used successfully in several communities.

"Basically, it's a credit card swipe system that allows users to pay for days or months of service in advance," Follweiler explained. "When the pre-paid amount gets close to zero, an in-home display flashes, alerting residents to the need to pre-pay for more time."

## Reducing disconnects

This will be especially beneficial in communities like Kutztown that have sizeable transient populations. "People sometimes forget to pay their bills," Walter Hess said, Superintendent of Water/Wastewater. "And the pre-pay method helps them remember."

Disconnects due to non-payment are tough on customers and costly for the utility. "ORION and TWACS set the stage for reducing disconnects considerably," said Follweiler, "and that's good for everyone."

## Data Communications Networks: Water and Electric

On the West Coast, the ORION System is helping another multi-utility collect water

meter readings, along with electric readings, using a Data Communication Network. Shasta Lake, California, is a community of 10,000 near Shasta Dam—the second largest dam in the nation—which harnesses the power of the Sacramento River to generate electricity.

Badger ORION transmitters are installed on the community's water meters and send data to electric meter AMI transceivers made by Badger Meter partner Tantalus. Electric and Water readings are then radioed from one electric meter to another until they reach a repeater called a "shark fin."

Shark fins are positioned around Shasta Lake and transmit data to a 100-foot-tall antenna located near the city's center. The antenna relays information to a computer in Utility Billing Technician Connie Richter's office.

## Leak detection

"Along with many collection and billing efficiencies, one of the big changes," Richter said, "is we're able to determine remotely if a customer is losing water due to a leak. It could be a bad irrigation valve or someone might have left a hose on. When we notice water is being used continuously for a 24-hour period, we know that it's probably unintentional and alert the customer."

Meter Reader Levi Levanseler said city personnel were impressed by the ability of ORION to transmit signals through pit covers. "We thought we might have to open them up," he said, "but ORION's signals are strong enough to be picked up by electric meter transceivers with the lids intact."

Finance and General Services Manager, John Jones, is happy with the new system and said he would recommend ORION and Tantalus to other communities. "The utility business is all about customer service and conservation, and our new ORION and Tantalus system has improved both for the City of Shasta Lake."

## PLC: Gas and Electric

In the Midwest, the Rock Energy Cooperative (REC), headquartered in Janesville, Wisconsin, has used PLC to collect electricity readings from customers since the late 1990s.

"We have a Landis+Gyr TS2, PLC system," said REC Director of Utility Operations Denny Schultz. "Before we put it in, each account needed to be visited or contacted so we could get an electric reading, which was pretty much the way usage had been gauged since the beginning of the cooperative in the 1930s."

Cooperatives like the REC were formed as part of a national initiative to take electricity to rural users, especially farms. Today they supply power to about 12% of the US population—some 40 million people in 47 states—according to the National Rural Electric Cooperative Association.

## New customers

"In early 2007," Schultz continued, "we acquired a group of 10,000 customers in Northern Illinois that were previously served by an investor-owned utility. About 9,000 of the accounts also received gas from the utility and that was a completely new area for us."

At the time of the acquisition, electric and gas meters on the premises of the acquired customers were being read manually with all the accompanying drawbacks. "Things like bad weather, illness, locked gates, blocked doors all got in the way," explained REC Manager of Administrative Services Sharon Janes. "It just wasn't a very efficient or reliable way of getting usage data."

The cooperative wanted to include the acquired accounts in the TS2 system but the gas meters were a complication. "We solved that problem once we learned about ORION and its ability to record and transmit gas usage to an electric meter," Schultz said.

This is accomplished by installing an ORION transmitter on the gas meter at every account. The signal is relayed to an integrated ORION receiver located in the TS2 AMI equipment attached to the electric meter. Electricity and gas readings are sent to the substation and then to REC's office, using PLC.

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Sacramento River below Shasta Dam, Shasta Lake, California

technology delivered.

## Utility Personnel Praise Data Profiling and Interval Data

By Ted Schaar

Information is power and it is one of the key drivers in helping utilities justify the implementation of an AMR technology solution. With Badger® ORION® Mobile AMR reading and GALAXY® fixed network AMI system, data profiling and interval data are tools that provide utilities with more than just a monthly reading to help manage their water system. These tools allow utilities to capture reading data to detect leaks, to understand end user water consumption patterns, and to conserve water. This article highlights the success Badger utility customers have realized capturing additional reading information from their end water users through their ORION and GALAXY deployments.

"It's helping our customers save water and money," said City Manager Doug Terry of Litchfield, Michigan. "So, they are very appreciative." He was referring to the interval data feature of the Badger® GALAXY® fixed network system.

Water Superintendent Dan Mann of South Elgin, Illinois, said that GALAXY's interval data is helping them explain water usage for billing purposes, but water conservation is becoming more important and it's helping them there, too.

"I know it is our favorite capability," said Meter Reading Supervisor Kevin Hickerson about data profiling, a similar feature that is part of the ORION® AMR system. Hickerson works for the Consolidated Utility District of Murfreesboro, Tennessee.

Loudoun County, VA Water Manager, of Field Services Kirk Marsh said, "Some of the things that are part of ORION are even more beneficial than we anticipated—one is data profiling."

### Water usage tracked

Both capabilities—data profiling and interval data—allow utility personnel to determine customer water consumption down to the day and hour, a major advance. In the past, usage numbers were lump sums that added up over months, even quarters.

With Badger GALAXY and ORION, precise data that indicates exactly when customers are using water is available at the click of a mouse.

Leak detection, part of both systems, is particularly helpful. It alerts utility personnel when an account has not had a zero-consumption hour during a full day. The culprit might be as simple as a faulty toilet flapper valve, but without GALAXY and ORION, such leaks often continue for days, even months, and waste huge amounts of water.

Data profiling and interval data also help utility personnel explain water bills and are great aids in water conservation. Thanks to the information they provide, people learn how much water common activities such as long showers and lawn sprinkling consume. Both capabilities are receiving high marks from utility personnel across the country.

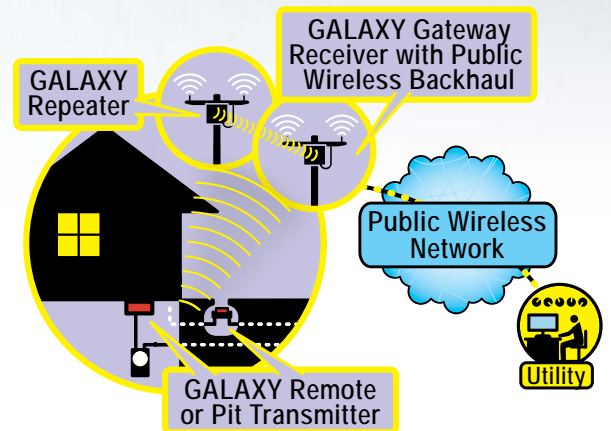
### "A big improvement"

Litchfield, Michigan, about 100 miles southwest of Detroit, is installing a Badger GALAXY system to replace a collection method that required utility personnel to visit each account. Homes had registers on exterior walls that displayed usage numbers, but readers needed to enter businesses to view meters in basements.

"When it comes to meter reading, GALAXY has brought us into the 21st century," said City Treasurer Jill Adams, who was involved in the selection process. "It transmits read data directly to city hall, so we don't have to send vehicles or personnel out. That's a big improvement."

### Two major advantages

Litchfield personnel said that GALAXY interval data helps them in two important ways. "It's a great aid in explaining bills," said City Clerk and Utility Billing Clerk Roger Streaque. "We can easily show customers when their high usage occurs, and they can't argue with science."



Interval data also alerts water department personnel to leaks on customer premises. "We've saved enormous volumes of water already," City Manager Doug Terry said, "just by letting people know that GALAXY has flagged their location." Usually the leak is in a faucet or water softener and can be repaired relatively easily and inexpensively.

"GALAXY gives us so much information that we never had before," Adams stressed. "It's like having a computer at every account. The biggest plus is it allows us to give customers better service."

### "Time-consuming hassle" eliminated

The Consolidated Utility District of Murfreesboro, Tennessee has grown by almost 20,000 people since 2005. To modernize the water accountability system, the district evaluated various AMR options before choosing ORION in 2004. "We're well over half-way done with the installation," said Meter Reading Supervisor Kevin Hickerson, "and hope to have everything converted by 2009."

ORION has made the collection of meter readings and billing for water usage "more efficient in many ways," Hickerson said, but he is especially impressed with data profiling.

"Before data profiling, explaining bills was a huge, time-consuming hassle," he remembered. "Now we can usually address concerns on the phone. In a few cases, we've shown customers a spreadsheet that makes consumption patterns easy to see and understand."

Hickerson said many people are "shocked" when district personnel show them how much water can be lost due to leaks and carelessness. "We

... Continued on page 4

had a family that turned a sprinkler on for the kids to run through," he recalled, "and forgot about it. After ten days it wasted an unbelievable amount of water."

### Usage database

As a service to Murfreesboro businesses, the district is using information it receives from data profiling to create a usage database. This will help it advise various types of commercial accounts, from apartment complexes to restaurants, which meter to install. "Our tap fees are based on meter size," Hickerson explained. "By going with a smaller meter an account can save \$20,000 right off the bat."

Hickerson mentioned two additional anecdotes that he said underscore the power of data profiling. Both situations involved washing machine hoses that began leaking while homeowners were away and ultimately led to flooded homes. "The customers called us because their insurance companies wanted to know how much water flowed into the house before the leaks were fixed. Data profiling enabled us to provide an exact gallon amount."

### "New era of capability"

The Village of South Elgin, with a population just over 20,000, is about 30 miles northwest of Chicago. Water Superintendent Dan Mann manages a distribution system that supplies 6,800 services across the community's 6.4 square miles.

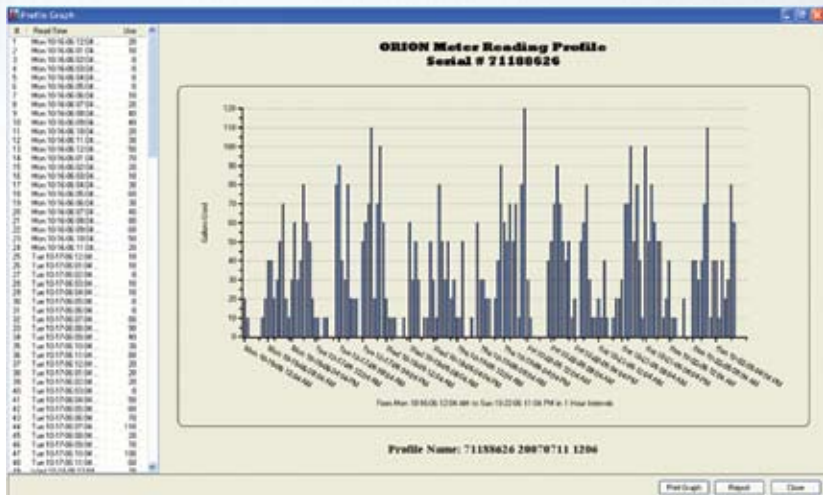
In 2007, Money Magazine placed South Elgin on its list of "America's Best Places to Live." The village's new Badger® GALAXY® system continues a tradition of outstanding municipal services.

"We've had centralized meter reading here for many years," said Mann, "but we've truly entered a new era of capability with GALAXY. "The interval data feature is excellent because it helps us explain usage patterns, identify leaks, and perhaps most important, it's instrumental in conserving water."

### Unaccountable water

Like many areas, South Elgin's water supplies are challenged by growing population and increasing demand. Mann continued, "Today, a big issue for us is 'unaccountable water,' that is, water that we pumped but weren't able to bill for. Interval data allows us to track every gallon."

Mann pointed out that the feature also helps his department spot leaks or unusual usage patterns



Data Profile Viewer Graph

that waste water. "The data definitely comes in handy with homeowners and renters," he said, "but we've also used it in discussions with business and commercial building owners who have high consumption."

Currently Mann's department is conducting a study aided by GALAXY's interval data feature that will help it predict how much water different kinds of accounts, from residences to large office buildings, typically use. "Then we'll be able to supply guidelines that show homeowners, renters, or businesses how their usage compares to similar accounts," he said.

"Interval data is great for all kinds of things," he concluded, "from explaining bills to detecting leaks, but I think where it really is going to be beneficial is in helping people learn where their water is going and to help us teach customers how to use less of what is truly a precious resource."

### "Pinpointed hundreds of leaks"

Loudoun Water, of Ashburn, Virginia, provides "water and wastewater service to more than 175,000 people in Loudoun County," according to its web site.

"The county is about 22 miles west of Washington DC, and most of our customers are in outlying, rural areas," said Loudoun Water Manager of Field Services Kirk Marsh. "We also serve a few small towns in the county."

In September 2005, Loudoun Water began installing ORION® and now has nearly 40,000 meters modified, with about 17,000 to go.

Marsh said ORION is helping the utility hold the line on costs and provide high levels of service, but he had special praise for data profiling and the Water Meter Monitor.

"Data profiling has pinpointed hundreds of leaks already and is really saving the area a lot of water," Marsh emphasized. "The average leak we find is in the range of three to five gallons every five minutes, and we've been finding about six of those a week using data profiling."

He said that Loudoun Water purchases water from two sources so any that doesn't escape unused is literally money in the bank, for customers and the utility.



### ORION Water Meter Monitor

Marsh said Loudoun Water does a lot of outreach to educate customers on water conservation, and he is a strong advocate of the Water Meter Monitor.

"People like them because they help identify the actual usage of things like irrigation systems and what it takes to fill a swimming pool." He's a firm believer in the power of information to affect behavior and aid conservation. "The more tools we can put in customers' hands when it comes to being aware of water usage, the better," he said. "Someday I hope we'll be able to post usage online right down to the minute in real time so customers can see how much they've used and are using at any time."

## Accountability, accuracy, timeliness

Wherever they are employed, the Badger GALAXY and ORION systems are bringing new levels of accountability to the important business of water distribution.

Interval data and data profiling allow utility personnel to track usage with unprecedented accuracy and timeliness. Collected data is used to perform tasks ranging from determining typical usage patterns to isolating water-wasting leaks to establishing water conservation expectations.

Hickerson said data profiling is so important, "I wouldn't consider an AMR system without it—it's a valuable tool to the utility and to customers and now that we have it, we couldn't manage without it."

Litchfield City Treasurer Jill Adams summed up her experiences with interval data by characterizing it as "extremely effective and efficient."

Mann of South Elgin characterized the feature's key advantages as, "helping us find and solve problems quickly and putting

accurate, up-to-the-minute data at our fingertips for every account."

Marsh of Loudoun Water concluded, "When 10 to 15 gallons of water might be going into the ground every fifteen minutes, it's great to have a capability like data profiling to help find leaks."

The consensus among utility managers is that data profiling and interval data save time, money, and perhaps most important, water. ■

## Continued from page 2 - Multi-Utilities Are Benefiting From Badger® ORION® and Innovative Communications



Rock Energy Cooperative employees completing the installation of Badger® ORION® modules on gas meters

Installation of ORION equipment is now underway with the work being performed by an outside contractor. "About one-third of the conversions have been completed," Schultz said.

### Customer service advantages

Billing for all of REC's accounts is highly automated. "We send out invoices at about the same time each month so our customers know when to expect a bill," Janes said. "It's great to have the acquired accounts in the system. We now have data for these customers at our fingertips, so if someone calls with a concern,

we can look at daily readings and provide accurate numbers."

Janes said people are becoming much more energy-conscious given escalating costs, so easy-to-access and timely usage information helps REC personnel explain what kinds of customer activities contribute to higher bills.

"For example," she continued, "when people express an interest in lowering their bills we ask them whether they do things we know are expensive such as drying a pair of jeans or another apparel item alone rather than as part of a full load or leaving lights on when leaving a room. It's very helpful. How energy is consumed is a personal choice and we like to think we're helping people make better, more informed choices."

Schultz said that completion of the project is targeted for 2009. "It's been great working with Badger," he emphasized. "They're punctual and professional and we couldn't ask for more. Thumbs up!"

### Many benefits

Across the country, PLC and Data Communications Networks are offering utilities innovative

ways to retrieve meter data. With the assistance of ORION and technology provided by Badger Meter partners Aclara, Landis+Gyr, and Tantalus, it is now possible for multi-utilities to collect gas and water readings along with electric readings.

The around-the-clock availability of usage data enhances utility operations in many ways, from helping technicians detect power outages and leaks to preventing tampering. Bill explanations are also easier to present and understand, and utility personnel have excellent and timely information to assist customers who wish to reduce their use of energy and water.

Badger Meter's ORION system along with PLC and Data Communications Networks capabilities are also preparing the way for emerging technologies and methodologies that are still under research and development, including "smart meters." ■

Ted Schaar is a freelance writer based in Brookfield, WI.



# Badger® Permalog+® AMR Acoustic Leak Detection Made Easy

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## WATER CONSERVATION

Water conservation is a global issue and has been a topic of increasing concern for many utilities in drought areas or with aging infrastructure. Across the country utilities are facing water shortages and are forced to rethink the way they obtain, use, account for, and secure their water resources. Benjamin Franklin once said, “When the well is dry, we learn the worth of water.” What is water worth to your utility?

## HOW CAN BADGER METER HELP UTILITIES MINIMIZE NON- REVENUE WATER?

Badger Meter continues to lead the AMR/AMI industry with over a thousand satisfied customers who are using our metering and technology products every day. Badger offers utilities cutting-edge technology through our Badger® GALAXY® AMI fixed network solution and the best in mobile technology through the Badger® ORION® AMR product line. To help utilities in their water conservation efforts, Badger Meter has teamed up with Fluid Conservation Systems Inc. (FCS), an industry leader in water leak detection technology, to make system leak detection an integral part of everyday meter reading. Badger Meter has integrated the FCS Permalog+® leak detection system into both our GALAXY and ORION meter reading systems. When customers read their meters, they also obtain important system leak detection information from their installed Badger Permalog+ AMR acoustic leak loggers.

## HOW IT WORKS

Badger Permalog+ AMR acoustic leak loggers are wired to GALAXY or ORION transmitters and are deployed throughout the utility system by magnetically attaching to valves located on the water mains. The loggers monitor the water mains during the night time

hours when the system

is in its most “quiet” state. If the

logger senses a nearby water leak in the main, it sends this data to the wired GALAXY or ORION transmitter, which in turn broadcasts this

data in its standard transmission message. GALAXY and ORION transmissions are picked up during the normal meter reading process. Once back at the utility, this data is put into a report that shows all leak loggers that are reporting a leak condition. Normally a leak is picked up between two loggers. With this information the utility can utilize FCS’s sensitive leak correlators

to pinpoint the exact location of the main leak. This process dramatically increases the efficiency of the utility’s leak detection program and also allows for precise location of leaks in need of repair.

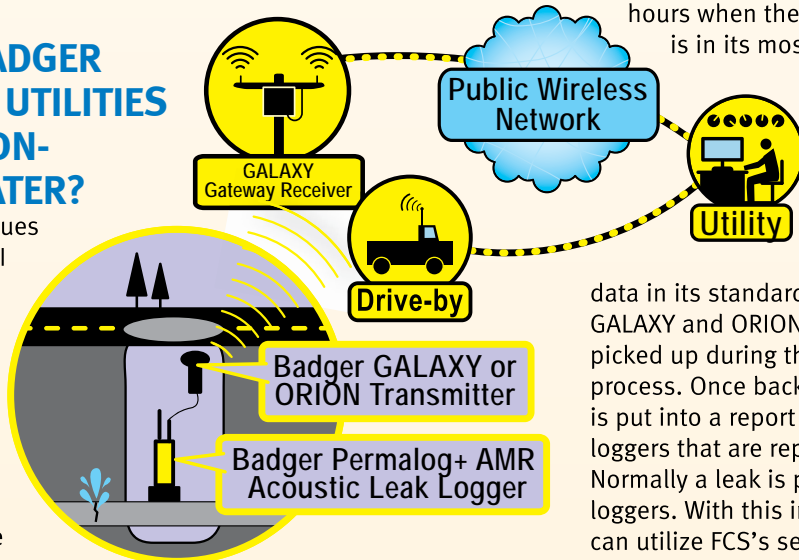
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## Success Comes In Threes For Two Distributors

By Ted Schaar

Length of time in business is an important measure of a company. Only those with the ability to attract and satisfy customers, manage resources effectively, and operate profitably last. Congratulations to Badger Meter distributors Stiles Company and Blair Supply Corp. who recently reached milestone anniversaries.

### THREE S'S GUIDE STILES

"This distributorship was built on the three S's—smiles, smarts, and service," reflected Stiles Company President Sandy Stiles. She was promoted to the company's top position in early 2008 but has worked for the firm, she said, "since the first inventory." That was in 1983 not long after her father and mother, Parker and Carole Stiles, opened for business in the family garage. Now celebrating 25 years, Stiles Company is a Massachusetts State Office of Minority and Women Business Assistance-certified enterprise.

#### Experienced entrepreneur

"My dad worked in the water industry," Stiles continued, "figured he could do better, and was told by a friend at Ford Meter Box that he should consider becoming a Ford distributor. Once they got the business going, my mother handled accounting."

Other lines were soon added, including Badger Meter, and it wasn't long before increasing sales required the company to relocate to its first commercial facility and then its second, each time in search of more space. Currently the firm is in the third building it has occupied, a 7,300-square-

foot office-warehouse with a large outside storage yard in Norwood, Massachusetts.

#### Product lines

Stiles Company sells hundreds of items across New England, its six-state territory in the northeastern corner of the U.S. "Our product lines start at the connection to the water main under the street and go to the meter in the home or business," Stiles said.

Ongoing investments—including a recently installed computerized materials management system—help provide exceptional customer service. Employees focus on meeting customer needs and receive regular training to keep current on product and industry developments.

"Our goal always is to exceed customer expectations," Stiles said. "If a contractor needs a part at 6:00 a.m., we're there."

### THREE PRINCIPLES GUIDE BLAIR

Blair Supply Corp. is celebrating 50 years as a distributor, but its roots go back another three decades to 1924, when Frank G. Blair opened a construction company. The primary focus shifted to water and wastewater in 1958, but the traditions established by the founder have continued.

#### Business philosophy

"Our success is based on three principals," said President Kevin A. Murphy. "We represent quality products, believe in long-term

relationships, and hire first-rate people." Most employees have been with the company at least 15 years and some have more than 30 years. Vice President Felix J. Valentino, who co-owns the company, joined in 1961.

The distributor serves the state of New York except for the lower Hudson River Valley and New York City and sells hundreds of products. Lines range from aluminum trench boxes to water meters and Automatic Meter Reading (AMR) systems. Blair Supply Corp.'s main office is in Rochester; additional locations are in Avoca and Watertown, New York. The Rochester facility features a well-equipped classroom that is used for lunch and learn workshops and other technical training sessions.

#### Great industry

Blair Supply Territory Manager John Murphy said it's rewarding to help communities meet their water needs. "Many of the products we sell are investments in metering water usage that bring in revenue. That's a big plus for citizens." More than 50 New York utilities are enjoying the efficiencies and financial benefits of Badger Meter AMR systems sold by Blair Supply Corp.

With water accountability becoming a primary concern of municipalities, Blair's management team believes the growth in sales for products that help record water usage and bill for it will be nothing short of spectacular in the years ahead.

There aren't any secrets to success, leaders of the firms said. It just takes integrity, hard work, and perseverance. ■



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## A Celebration of Cooperation

It is reminiscent of earlier times. Those were the days when an honest day's work was honored. It was common for employees to respect their employers and companies cared for those that worked for them. Pleasing the customer always came first and "The Customer is King" was more than a reminder posted on lunch room walls. Everyone just did it.

Too often these values no longer seem as relevant in our competitive global economy where cost cutting often trumps customer service. But there are companies that still exist today that remember and embrace those values. And they seek out and work with others that share their core values and prosper together in cooperative relationships. All of us at Badger Meter would like to take a moment to acknowledge our customer relationships in a Celebration of Cooperation.

In this issue of *CONNECTIVITY*, we recognize Frederick County, Maryland and thank them for being our customer.

Pictured below is the Frederick County Division of Utilities and Solid Waste Management building.

## Frederick County, Maryland and Badger Meter Share A Common Vision... Satisfying Customers

By Dave Marsh

Mike Marschner, the Director of Public Utilities and Solid Waste for Frederick County, Maryland focuses his staff on his most important goal... satisfying their 20,000 water customers. David Tuholski, Sales Support Manager for Badger Meter focuses on his most important goal... satisfying Badger's customers.

Although both Badger and Frederick County share a common vision of customer service, it's been their commitment to working together for almost three decades that has helped Badger meet the needs of Frederick County, which in turn has helped Frederick County meet the needs of its many customers.

"We've been pleased with Badger Meter technology and products," said Marschner. "But Badger's service is the big reason we've had such a great relationship for so long. In a way, an AMR meter is similar to an ATM machine.

It's an electronic device that is central to accurate accounting of our customers' use. Our meters measure how much water is used and as a result, how much our customers are billed. This is critical because our customers have to have confidence in the accuracy of our water meters and the reading system. That being said, there will always be a few of our customers who disagree with the readings. When those situations arise, Badger always works with us to sort things out with our customers."

### Frederick County can count on Badger

David Tuholski, who has worked with Frederick County for more than two decades, talks about how he routinely gets involved in helping his customers serve their customers. "When Frederick County is being questioned by one of their water customers, I want them to know we have their backs. We'll do whatever it takes to help them. We've shipped meters in



question to our Milwaukee labs for testing just to satisfy a Frederick County customer questioning a bill and a meter's accuracy. We've even gone as far as asking other utilities to independently test them to eliminate any doubt."

Dave Boller refers to himself as a "worker bee" in the Frederick County Water Department. "I do some of everything around here," said Boller. "So, I've dealt with a wide range of issues. Over the years, in the process of helping our customers, I've gotten to know many people at Badger Meter. Whether they're in the field or in the office, Badger people always seem ready to help you. And if for some reason they don't have the answer that solves your problem they don't hesitate to bring in someone else who does. Unlike so many large corporations you'll never hear any of them say it's not

their job or you're going to have to go someplace else. Customer service is the backbone of any successful business and it's the reason behind Badger's success."

### **Customer service is critical to implementing today's technology**

Water meter technology continues to advance, and over the years Frederick County has adopted one generation of Badger technology after another. "As we saw technology change, Badger Meter always worked with us to migrate to it cost-effectively," said Marschner. "They were there every step of the way with training and support. For example, when we needed to integrate our metering system with our billing system, Badger worked directly with our other suppliers to make it happen. In today's world, long-standing relationships help ensure that you can sustain the level of service you're providing. If you switch from

vendor to vendor you're not going to get the same kind of commitment you're going to get from a single source."

Frederick County recently began installing the Badger® ORION® Automatic Meter Reading (AMR) System and Boller likes the features that help the water department better serve its customers. "We can now inform customers when they have a leak by detecting water running through their meter continuously for a 24-hour period. Saving customers money by helping them identify leaks is a very tangible way to improve service to our customers."

Boller appreciates Badger's support. "In satisfying our customers the buck stops here. But, it's nice to know that we have a lot of Badger people backing us up." ■

Dave Marsh is a freelance writer based in Port Washington, WI.

## Tradeshows & Events

### Upcoming 2009 Utility Tradeshows and Events

Please visit our website at [www.badgermeter.com](http://www.badgermeter.com) for up-to-date information on tradeshows and events.

March 2-4, 2009  
**T.W.U.A. 91st Annual Conference**

March 4-6, 2009  
**Texas Rural Water**

March 16-19, 2009  
**ISAWWA Spring Conference**

March 23-26, 2009  
**Mississippi Rural Water Association Conference**

March 24-26, 2009  
**Kansas Rural Water Association**

March 24-27, 2009  
**Wisconsin Rural Water Association Conference**

March 31 - April 2, 2009  
**PA Rural Water Association Conference**

March 30 - April 2, 2009  
**WaterEc Conference**

March 31 - April 3, 2009  
**NJAWWA Annual Conference**

April 1-2, 2009  
**New England Water Works Association Conference**

April 6-9, 2009  
**CA-NV AWWA Spring Conference**

April 14-15, 2009  
**GAWP 2009 Conference & Expo**

April 21-23, 2009  
**New York Section AWWA Spring Expo**

May 3-4, 2009  
**Alabama League of Municipalities**

May 4-7, 2009  
**Western Gas Measurement**

May 5-7, 2009  
**PA Section AWWA**

May 11-13, 2009  
**VA-AWWA Utility Rodeo**

May 11-14, 2009  
**New York Rural Water Conference**

May 13-15, 2009  
**Hawaii Section AWWA Annual Conference**

May 19-21, 2009  
**American Gas Association**

May 19-22, 2009  
**Association of California Water Agencies**

June 14-18, 2009  
**AWWA - ACE09**

June 28 - July 1, 2009  
**Maryland Municipal League**

June 28 - July 1, 2009  
**GFOA**



From Left to Right - Customer Service Representatives Jenna Slattery, Julie Goodrich, Edwill Rivas, Kathy Moore, Juliette Pedlar (CS Manager), Joel Rosen, Chrissy Romano and Larry Duemmling (Assistant Director of Utilities)

For many years, the city of Plantation, Florida, paid a vendor to collect water meter reads. “The price was so reasonable, we couldn’t justify switching to an automatic meter reading (AMR) system,” recalled Assistant Director of Utilities Larry Duemmling.

“But then the firm’s owner came to us and said, ‘I’ve worked hard all my life and have decided to close the business and begin raising grapes.’ Now he’s bottling and selling his own brand of wine.”

Officials contacted other meter reading companies but price estimates were considerably higher than the previous supplier’s per-meter rate, according to Duemmling. “At that point, we re-ran the numbers and AMR became competitive.”

### Fast-growing suburb

Plantation — whose motto is “the grass is greener” — is located about 20 miles northwest of Miami. It has grown rapidly. The population was approximately 500 when the community was incorporated in 1953 and now stands at just over 85,000.

A city Internet page states that the name comes from the original settlers calling their one-acre tracts of land “little plantations” and also from a time when the

## Budget-Neutral AMR Targeted in Plantation, Florida

By Ted Schaar

area the city occupies was known as “the Old Plantation Water Control District.”

### Budget-neutral is goal of performance contract

In an effort to get the “most juice out of the orange,” Duemmling said Plantation decided to sign a performance contract with a “resource efficiency” company that would recommend an AMR solution, manage its installation, and be responsible for assuring that ultimately the project didn’t cost the city anything. “This project goal is termed ‘budget-neutral,’” Duemmling continued, “and after reviewing the qualifications of a number of firms, we chose Milwaukee-based Johnson Controls, Inc. to help us achieve it.”

A budget-neutral outcome would be possible based on three factors, Duemmling explained, first, eliminating the expense of paying an outside agency to collect reads from the city’s 28,000 meters; second, reducing costs associated with customer service personnel entering reads into a computerized billing system; and third, additional revenue would flow in due to the increased accuracy of new meters.

“The AMR system would also eliminate the need to do estimates because of unfriendly dogs, cars parked over meter pits, and other circumstances which prevented readers from accessing meters,” he added. Water meters are usually located in the strip between the curb and the sidewalk, and residents sometimes park vehicles over them inadvertently.

Plantation allows residents to have two meters, one for household water and a

second for water used only for irrigation. “A lot of people enjoy gardening in Plantation,” Duemmling explained, “and because the water used to sprinkle plants doesn’t have to go through the wastewater treatment facility, we charge only for the water used—no sewage charge. That is a considerable savings for our customers.”

### AMR leader Badger Meter favored

Duemmling mentioned that there was never a doubt which company Plantation would choose for its AMR system and meters. The community has relied on Badger Meter for decades, he stressed, and is a happy customer. “We view our meters as cash registers, and Badger’s products have not only been reliable, they’ve generated exceptional revenue. In addition, Steve Portlance, our sales representative, is always on top of things and answers our questions promptly.”

### Transmitters, meters, and lines installed

Installation of the Badger® ORION® transmitters began in February 2008 and work was completed by the end of September 2008.

Meters newer than five years were retrofitted with an ORION transmitter, a procedure that usually takes no more than 30 minutes. Meters older than five years were replaced with new Badger® meters.

In a separate capital improvement project, installers replaced water lines between mains and meters. “Some of the galvanized pipe that was used originally is badly clogged by scale,” Duemmling

said. "We've seen pipes narrowed to the diameter of a pencil. Homeowners notice a big difference in water pressure when we replace those old lines with PVC pipe."

### Efficiency and customer service improvements

The new Badger ORION system is already operating and reducing personnel hours dramatically. Sections of the city that previously took three people a day to read are now completed by one person in four hours, a savings of 20 hours a month.

Duemmling is particularly impressed by Badger ORION's data profiling feature, which he compared to having a 24/7 window on each customer's usage. He cited the case of a local restaurant when describing the feature's benefits. "We noticed this business' consumption was unusually high and could tell water was being used even after the place closed for the day," he recalled.

Prompted by water department personnel, the customer contacted a plumber who discovered a crack in the restaurant's piping. "The owner was pretty happy to be informed about it," Duemmling said. The feature also helps reveal problems such as stuck toilet flapper valves, a common

source of high water usage. "People call and exclaim, 'I couldn't possibly have used that much water!' Data profiling allows us to show them the time the leak started, stopped, and how many gallons per hour were used."

### Conservation aided by monitor

The department also loans Badger® ORION® Water Meter Monitors to customers, giving them the option of returning the device in good working order after three months or buying it. "The monitor is about the size of a deck of cards," Duemmling said, "and allows customers to remotely 'read' their water meter conveniently, from inside their home. The device answers questions such as, 'How much water did my teenager use for that 30-minute shower?' It's great for people who are trying to conserve."

In explaining why he would recommend Badger ORION and other Badger products, Duemmling emphasized that public officials have a responsibility to make sure citizens get the best bang for the buck. "Badger Meter has done an excellent job for Plantation, and I'm confident the company will do the same for other communities." ■



Ginette Fogel and Larry Duemmling operate a Water Meter Monitor



Susan Graham (Secretary to the Director) and Joel Rosen (Customer Service Representative) review ORION® Data Profile information



Badger Meter's new 20-page utility product guide, "Metering and Meter Reading Solutions," outlines features and benefits to help you maximize your revenue.

The new catalog includes metering product lines, Advanced Meter Reading (AMR), and Automatic Metering Infrastructure (AMI), along with network connectivity solutions

[www.badgermeter.com](http://www.badgermeter.com)

## Company News

# Badger Introduces New Metering and Meter Reading Solutions Guide

By Laurie Reichelt - Marketing Communications Manager

through our Multi-Utility Alliance Partners. Make a confident choice by selecting one of Badger's METERING AND METER READING SOLUTIONS from our new product guide and ensure optimal system performance every day.

As a leading manufacturer and marketer of flow measurement and control products, Badger serves utilities, municipalities and industrial customers worldwide. Our

products are known for their high degree of accuracy, long-lasting durability, and the ability to provide valuable and timely measurement information. Get your copy of our new product guide today.

Contact us at [infocentral@badgermeter.com](mailto:infocentral@badgermeter.com) and ask for part number G-100, Metering and Meter Reading Solutions Guide. ■



For more information about the articles in CONNECTIVITY, please contact Christie Nowak at Badger Meter, Inc. 414-371-5790, Fax: 414-371-5932 or cnowak@badgermeter.com.

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# Who's Who at Badger Meter



**Diana Brazell**

Badger Meter is pleased to welcome Diana Brazell as Account Manager for New York State. Diana comes to Badger Meter with over

ten years of wireless sales experience. Diana is a graduate of State University in New York at Utica/Rome, with a BS in Accounting. Diana and her family reside in Buffalo, New York.



**Michael Myers**

Badger Meter is pleased to welcome Michael Myers as support specialist for Badger's technical support team. Michael is a graduate of the Milwaukee School of Engineering with a

bachelors of science degree in electrical engineering. Michael comes to Badger meter with over 14 years of technical support experience. Michael and his family reside in Germantown, WI.



**La Von Poindexter**

Badger Meter is pleased to welcome La Von Poindexter as support specialist for Badger's Training Support group. La Von is a graduate

of the University of Wisconsin - Milwaukee with a BA in history. La Von comes to Badger Meter with over 8 years of training and support experience. La Von and his family reside in Milwaukee.



**Christopher Smith**

Badger Meter is pleased to welcome Chris Smith as support specialist for Badger's Training Support group. Chris is a graduate of Vanderbilt University and holds a degree in Mechanical Engineering. Chris

served 6 years in The U.S. Army. After his commitment he worked for a Fire Mechanical contractor and prior to coming to Badger Meter, he worked for a security software company assisting in product development and performing trainings. ■