It’s an amazing time to be in business

In the last ten years we have witnessed seismic shifts—changes that have affected our personal lives, our communities, and our professional pursuits.

Clear Creek Associates began in September 1999 as an Arizona hydrological consulting company with a solid foundation of scientific and professional experience. Over the last ten years, we have seen that experience grow with the emergence of new technology and new perspectives on water issues. As we mark our first decade in business, our staff, too, has grown by a factor of ten. And we have expanded from a focus on the Southwest deserts to exploring the West Coast’s unique water issues and pursuing the very different challenges and opportunities on the East Coast.

As our company has evolved, our original approach has continued to sustain us: practical solutions in groundwater science. That philosophy has given us the ability to be flexible and responsive to our changing environmental and economic landscape.
The Leveloader Gold is a convenient data transfer unit designed for use with all versions of the Solinst Levelogger, Barologger and Rainlogger. View readings, program dataloggers and download multiple data files in the field.

Mandate To Deliver Quality
Since the Levelogger Gold was launched at the beginning of 2006, Solinst has shipped thousands and thousands of units to satisfied customers all over the world.

“Our mandate is to design and deliver high quality products, and back it up with our 3 Year Warranty, demonstrating the Solinst commitment to our customers.”

— Sarah Belshaw, President

Dependable Water Level Datalogger
- Maintenance Free Design/Lifetime Calibration
- Backwards Compatible
- 3 Year Warranty
- Real-Time View
- User-selectable Sampling Schedule
- 10 Year Battery (1 reading/minute)
- SCADA Ready (SDI-12)

The Levelogger Gold is a self contained water level datalogger, which is completely designed, developed and manufactured in-house, in the tradition of all Solinst high quality products. The Levelogger Gold uses infra-red data transfer, providing the flexibility of installing by use of a simple wireline or by using a Direct Read Cable to surface. The Levelogger Gold includes a pressure transducer, temperature thermistor, 10 year lithium battery (based on 1 reading per minute), and internal data logger with a capacity of 40,000 temperature and water level data points.

Remote Monitoring System for Leveloggers
The STS Gold Telemetry System provides an economical and efficient method to access remote data instantly. Built for Leveloggers, the system combines high quality data loggers, intuitive software and a variety of wireless communication options to create a remote monitoring solution. Cellular, satellite and radio options give the flexibility to suit any project. Alarm notification and diagnostic reporting make system maintenance simple.

Instant Access and Data Control
- Easy setup, operation and data management
- Reliable data transfer over the internet
- Manage the data yourself
- No data hosting

Applications
- Remote water level monitoring
- Long-term monitoring
- Management of water taking
- Aquifer management

Levelogger Proven to be Worth its Weight in Gold

Levelogger Junior
- $385.00 US
- Reduce Your Bottom Line
- A low cost alternative in the Levelogger Series
- Accuracy of 0.1% FS
- 32,000 Datapoints
- 5 Year Battery
- 1 Year Warranty
- Compatible with Levelogger Gold Series, Software and Accessories

Leveloader Gold
- Rugged Data Transfer Device
- Dedicated to Levelogger Series
- Real-Time View
- Stores 1.39 Million Datapoints
- Re-program in the Field

The Leveloader Gold is a convenient data transfer unit designed for use with all versions of the Solinst Levelogger, Barologger and Rainlogger. View readings, program dataloggers and download multiple data files in the field.

High Quality Groundwater & Surface Water Monitoring Instrumentation

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From the Publisher

Turn off the tap. Replace your toilet. Get rid of the grass. And don’t overwater. We’ve all heard conservation messages, many of us have changed our habits, and some are adjusting to mandatory restrictions. Are we making a difference? Yes, especially at the residential level. In spite of this progress, water demand will continue to rise in the Southwest, especially once economic recovery begins, and changing climate will limit the supplies we currently rely on. Conservation can provide a cushion during short-term drought or extend the time until more expensive new water sources are required. But consider that the water providers, who lead the call for conservation, depend on water sales to pay their bills. How can they sustain their operations? Raising the rates would not be much of a reward to scrimping customers. Some conservation issues have yet to be worked out. Meanwhile, go fix that dripping faucet.

Thanks to all the contributors to this issue, who as always represent a diversity of sectors and geographic locations. We are also grateful to our record number of advertisers for 2009 (page 43), as well as our generous sponsors (page 9). You are all critical to our continued production and success.

Betsy Woodhouse, Publisher

Correction

A miscalculation in the sidebar on page 21 of the Sept/Oct 2009 issue of Southwest Hydrology gave incorrect information about the scale of CO₂ sequestration needed to achieve atmospheric CO₂ stabilization. In fact, if the 8,100 largest CO₂ sources were captured at 80% efficiency, a global storage target of 100 bmt in 100 years could be achieved in less than eight years. The 100-year target could also be reached if the 8,100 sources captured just 6% of their emissions per year.
Even grown-ups play with cool new toys.

and the new RiverSurveyor could well be your favorite new toy too.

- Continuous shallow-to-deep discharge measurements
- Ideal for extreme flood or drought conditions
- Instant data from your mobile device
- Use in canals, streams and rivers
- Small, portable and easy to use
Water Conservation

Water conservation is usually the first option utilities turn to when supplies suddenly run short. Increasingly, utilities are turning to conservation not just to survive short-term drought, but as a means to increase overall efficiency of water use; the saved water is a “new” supply for the future. But to effectively include conserved water as part of their water portfolios, providers must be able to quantify the savings, identify where additional savings might be achieved, and understand why some programs don’t catch on. This issue’s features consider existing and potential savings in a variety of sectors, as well as means to quantify savings and design effective savings-measurement programs. Finally, we consider the catch-22 of water providers who promote conservation yet depend on water sales to remain fiscally sound.

18 Sustaining Agriculture in an Uncertain Future: The Role of Water Efficiency
Heather Cooley, Juliet Christian-Smith, and Peter H. Gleick
The Pacific Institute envisions a future with sustainable, healthy agriculture that is far more water efficient than today. Just how viable this future is depends on several variables, including the ability of multiple stakeholders to get on the same page.

20 Making Every Drop Work in California’s CII Sector
Ronnie Cohen, Kristina Ortez, and Crossley Pinkstaff
The commercial, industrial, and institutional (CII) sector remains an elusive target for conservation advocates but offers opportunities for significant water savings. What can be done to convince hard-to-reach profiteers and industrialists that conservation benefits them as well?

22 Growth, Cost and Other Excuses: Challenges to Water Conservation
Betsy Woodhouse
Water conservation program managers have heard every excuse in the book; they know all the reasons their customers can’t or won’t stop water waste. Identifying these reasons is the first step toward developing truly effective local programs. As with most things, however, one size does not fit all.

23 Residential Savings: How Much and at What Cost?
Forty-four municipal water conservation programs in 11 states were evaluated to determine actual water savings achieved and the range of costs to utilities and customers. Some of the results may surprise you.

24 Apples to Apples: A Standardized Measure for Municipal Water
Cheri Vogel and John Longworth
The evaluation of conservation efforts hinges on having a standard unit of measurement, typically gallons per capita per day (GPCD). Yet the calculation of GPCD varies widely across agencies and is impacted by external, non-conservation events. New Mexico is currently testing a standardized approach to the calculation. What is the progress to date?

26 Designing Conservation Programs for Verifiable Savings
Maureen Erbeznik and Joanne Rector
No water utility wishes to embark on a conservation program that fails to save water or costs a fortune to implement. Properly designed evaluation, measurement, and verification processes can lead to effective conservation programs—provided utilities pitch it to customers correctly.

28 Can Water Providers Afford Conservation?
Gary Woodard
Water utilities often turn to conservation as a relatively inexpensive way to stretch the existing water supply during drought or as part of long-term planning. But utilities also depend on water sales to pay their bills—a successful conservation campaign can end up hurting their bottom lines if revenues fall significantly. Decoupling is one possible solution to this insider tug-of-war.