



SWS Enews



Water solutions in perspective

April 2006

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Waterloo Hydrogeologic, Inc
A Schlumberger Company

Schlumberger

With revenues of over US\$14 billion and over 60,000 employees, Schlumberger Limited has become the leading oilfield services company in the world by continuously innovating technologies such as high-resolution seismic imaging, advanced geophysical logging, and sophisticated three-dimensional modeling.

Schlumberger Water Services

Today, Schlumberger is adapting our oilfield technologies to help groundwater professionals manage the world's water resources. We recently formed the Schlumberger Water Services Division by combining our own strengths with those of Waterloo Hydrogeologic, Inc., Westbay Instruments, and Van Essen Instruments. Together, we provide comprehensive water solutions, with particular focus on groundwater resource assessment, technology development, and data management.

Product news

Spring into the Field Season with great deals on AquiferTest Pro & Testwell Meter Bundles!

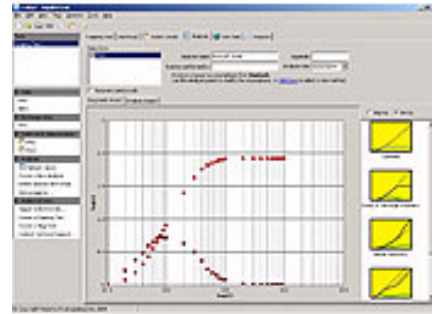
Until May 31, 2006, bundle Waterloo Hydrogeologic Inc.'s AquiferTest Pro, for quick and easy analysis of pumping and slug test data, with a Testwell Water Level Meter or Testwell Interface Meter at a 15% discount.

Testwell's award winning meters include:

- Non stretch tape that meets or exceeds US GGG-T-106E and EEC CLASS II specifications for guaranteed accuracy of .008%
- Unique bridge-proof probe and sensitivity control
- Your choice of probe sizes
 - Water Level Meter - 5/8", 7/16", 3/8" or 1/4"
 - Interface Meter - 5/8" or 7/16"
- A longer lasting reel body with a lifetime warranty
- High quality electronic components that are backed by a 10 year warranty
- Tapes clearly marked 1/100ft. or each mm

For further information, or to place your order, please contact the sales department at Waterloo Hydrogeologic Inc. at sws-sales@slb.com or +1-519-746-1798.

Do not miss this opportunity to start your field season off right with this limited time offer!



AquiferTest Pro



Water Level Meter

For more information, please contact us today:

Phone: +1-519-746-1798

Email: sws-sales@slb.com

Website: http://www.waterloohydrogeologic.com/equipment/equipment_main.htm

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Monitoring Solution Bundles for Your 2006 Field Season!

Start the 2006 field season off on the right foot with reliable, cost-effective and integrated solutions from WHI. Choose from 3 different convenient monitoring solution bundles that include the Diver and CTD-Diver!

Diver® Datalogger

The Diver® datalogger (previously sold as the Levelogger in North and South America) is the smallest instrument in the world for automatic measurement and registration of groundwater levels and temperatures. With a 125 mm length and 22 mm diameter, the Diver® can be used in almost any monitoring well.

CTD-Diver®

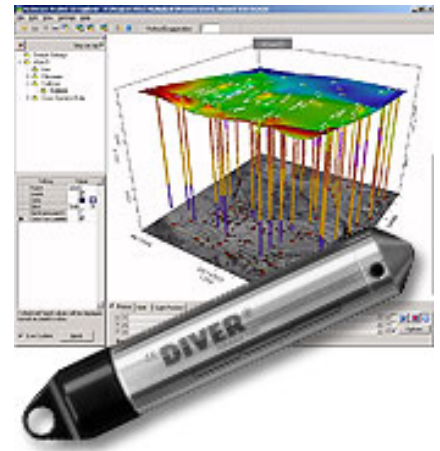
The CTD-Diver® records conductivity, water levels and temperature and is ideally suited for saltwater intrusion and groundwater contamination indication. The housing and pressure transducer are made entirely from ceramics, offering the only solution against corrosion for long term deployment.

The CTD-Diver features:

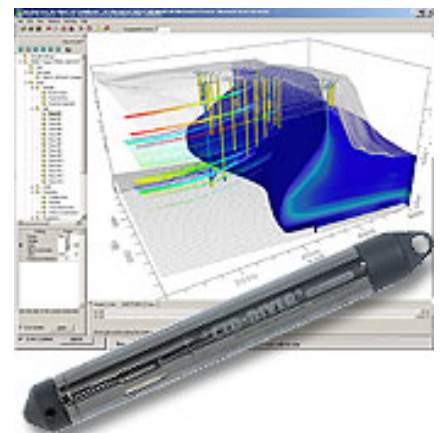
- Proven 10yr track record with installations worldwide
- Integration into popular and easy-to-use WHI software for fast analysis and display of your results
- Easy to use software for programming and data retrieval

We are proud to have set the standard for groundwater dataloggers. Can you afford to gamble with your project with unproven technology?

[Click here](#) to download a PDF for more details. Contact us today at +1-519-746-1798, or by email at sws-sales@slb.com



Monitoring Network Bundle



Saltwater Intrusion Bundle



Aquifer Pumping Test Kit

For more information, please contact us today:

Phone: +1-519-746-1798

Email: sws-sales@slb.com

Website: http://www.waterloohydrogeologic.com/equipment/groundwater_dataloggers.htm

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Consulting Services News

SWS Exhibiting at Workshops & Conferences Around the World

Schlumberger Water Services will be exhibiting our services at a number of upcoming conferences and workshops throughout Canada and USA. Our hydrogeologists and engineers will be attending these events and we would like to meet you and demonstrate our advanced monitoring service, software tools and discuss our full suite of services.

Upcoming Events

- [2006 Groundwater Summit - USA](#)
Dates & Location: April 22-27, San Antonio, Texas
Booth Number: 24
- [Simpósio Latino-Americano de Monitoramento de Águas Subterrâneas - Brazil](#)
Dates & Location: April 23-26, Belo Horizonte - MG
Booth Number: 9
- [Water Expo 2006 - China](#)
Dates & Location: April 26-29, Beijing
Booth Number: 1209



[Learn more about WHI's Consulting Services on the WHI website!](#)

For more information, please contact:

Phone: +1-519-746-1798

Email: sws-services@slb.com

Website: www.waterloohydrogeologic.com/consulting/consulting_services.htm

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Training News

Environmental and Groundwater Modeling Course Line-Up

The 2006 Waterloo Hydrogeologic Open Enrolment schedule is in full swing! The following list of courses will be offered over the next six months.

Can't make it to one of our Open Enrollment Courses? Call us about our [On-Site Custom](#) Courses designed to suit your specific needs!

[Request your free 2006 Training Course Schedule Catalog!](#)

[Get our full 2006 training schedule!](#)



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Applied Groundwater Flow and Contaminant Transport Modeling

Theory and hands-on applications using MODFLOW-2000, MODPATH, MT3D and WinPEST

Simple to complex applications of groundwater flow and contaminant transport models are covered in this 4-day hands-on course.

Course Objectives and Benefits

- Apply Visual MODFLOW Pro to 3D groundwater flow and contaminant transport projects.
- Use MODFLOW-2000 to develop several groundwater flow models
- Calibrate your groundwater models to observed field data.
- Use MODPATH particle tracking features to determine preferential flow paths and delineate capture zones.
- Use ZoneBudget to assess subregional water budgets within your groundwater model.
- Simulate 3D contaminant transport using RT3D, MT3DMS & MT3D99.
- Use WinPEST to improve model calibration and understand model uncertainty.

Learn more about this course:

Details: www.waterloohydrogeologic.com/training/groundwater_training_course_aftm.htm

Registration: www.waterloohydrogeologic.com/training/training_course_registration_us.htm

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Model Calibration and Predictive Analysis

Using PEST, Visual MODFLOW and FEFLOW

This intensive 5-day course will cover computer assisted calibration of environmental models and the analysis of their predictive uncertainty. The course includes a thorough coverage of the theory of nonlinear parameter estimation and a comprehensive treatment of the practical aspects involved in the calibration and deployment of different types of models, particularly groundwater and surface water models. The first 4 days will consist of Model Calibration and Predictive Analysis using PEST, and the last day will consist of Applied Inverse modeling using either Visual MODFLOW or FEFLOW.

Learn more about this course:

Details: http://www.waterloohydrogeologic.com/training/training_course_pdfs/2006-germany-freising-model_calibration.pdf

Registration: www.waterloohydrogeologic.com/training/training_course_registration_us.htm

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Making Sense of Environmental Data with HydroGeo Analyst

Understanding Data Sources, Data Analysis and Visualization

This 3-day course looks at how you can make the best use of your resources to ensure that all of your data management needs are met within the HydroGeo Analyst software environment. You will learn how to develop a GIS enabled database that integrates various types of data (geologic, hydrologic, soil samples and groundwater samples, etc.), and then use the data to develop database queries, borehole logs, cross-sections and 3D visualizations of site data. The lectures in this course are supported by structured lab exercises, which give you the opportunity to apply the techniques discussed and use the analysis, visualization and reporting tools available in HydroGeo Analyst. This course goes beyond the basics and emphasizes the techniques needed to manage project data efficiently and effectively. It is ideally suited for anyone who wishes to learn the principles behind effective environmental data management and become more proficient in creating and managing projects within the HydroGeo Analyst environment.

Learn more about this course:

Details: http://www.waterloohydrogeologic.com/training/groundwater_training_course_environmental_data_with_hga.htm

Registration: www.waterloohydrogeologic.com/training/training_course_registration_us.htm

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Finite Element Groundwater Modeling

Advanced Applications for Saturated/Unsaturated Flow & Transport, Density-Dependent Flow and Heat Transport

This 4-day hands-on course includes advanced applications of groundwater flow and contaminant transport models using the Finite Element method. This course provides a more complete understanding of the use and applicability of finite elements in groundwater modeling, and includes such topics as groundwater flow and transport modeling, principles of unsaturated flow, fracture flow modeling, thermal transport, and density-dependent flow modeling. This course is ideally suited for groundwater modelers who wish to advance their modeling knowledge, and apply finite elements—using FEFLOW—to more complex modeling designs.

Learn more about this course:

Details: http://www.waterloohydrogeologic.com/training/groundwater_training_course_fem.htm

Registration: www.waterloohydrogeologic.com/training/training_course_registration_us.htm

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Regulatory Review of Hydrogeology Studies

Approaches and Insights for Reviewing Modeling Reports

This 4-day course provides an overview of how to review a hydrogeologic study from a regulatory perspective, with attention given to the groundwater modeling component and how it is reported. This has applications in reviewing modeling studies, peer review of consultant workplans, and specification of modeling requirements for tendering groundwater studies.

Learn more about this course:

Details: http://www.waterloohydrogeologic.com/training/course_regulator.htm

Registration: www.waterloohydrogeologic.com/training/training_course_registration_us.htm

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Contaminated Site Risk Assessment and Groundwater Modeling

Transport Processes, Natural Attenuation and Risk Assessment

This 4-day course was designed to combine the best know-how and tools in risk assessment and modeling for the most advanced decision making capabilities available. Attendees in this course will gain a more complete understanding of Groundwater Contamination and Remediation Modeling by incorporating USEPA endorsed Risk Based Decision Making. Topics that will be covered include: contaminant source area characterization, the risk assessment process, the fundamentals of natural attenuation, an introduction to Visual MODFLOW Premium with practical risk based applications, and ASTM 1739; Risk-Based Corrective Action. This course is suited for groundwater modelers and risk assessors who wish to develop a better understanding of Groundwater Contamination and Remediation Modeling and, how Risk Based Decision Making impacts the outcome of your projects. The Instructors for this course will include Troy Schultz, a risk assessor with 15 years experience in the Environmental Industry, who is designated by the American Society for Testing and Material (ASTM) as a sanctioned Risk Based Corrective Action (RBCA) Trainer. Participants will have hands-on exercises with fate and transport modeling, risk assessment, and developing site-specific clean-up goals for remediation.

Learn more about this course:

Details: http://www.waterloohydrogeologic.com/training/groundwater_training_course_crg.htm

Registration: www.waterloohydrogeologic.com/training/training_course_registration_us.htm

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Tips & Tricks

AquiferTest 4.0 - Importing Height of Water Column Data

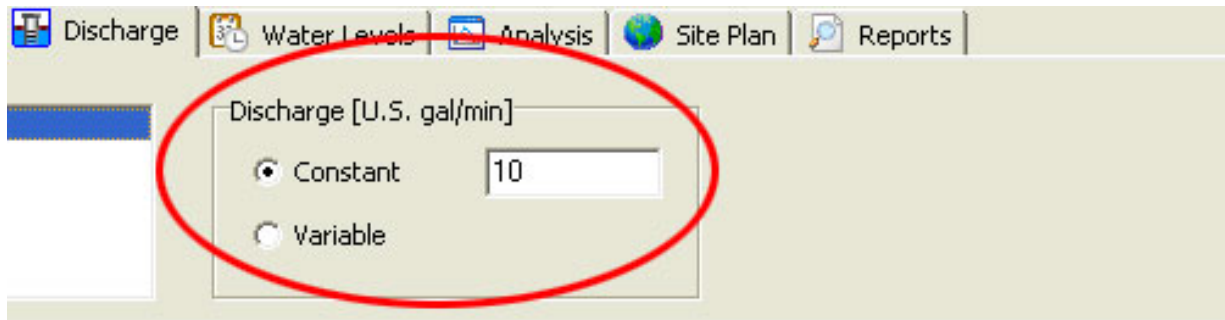
Step 1

If your Diver/Pressure transducer records measurements in Height of Water Column (instead of Depth to Water Level), AquiferTest 4.0 allows you to import data in this format. When creating a Pumping Test you will need to enter a Benchmark Elevation for the observation well. (Under the Pumping Test tab)

X [ft]	Y [ft]	Elevation (a)	Benchmark	Penetration	R [ft]	L [ft]	b [ft]
0	0			Fully			
100	100		0	Fully			

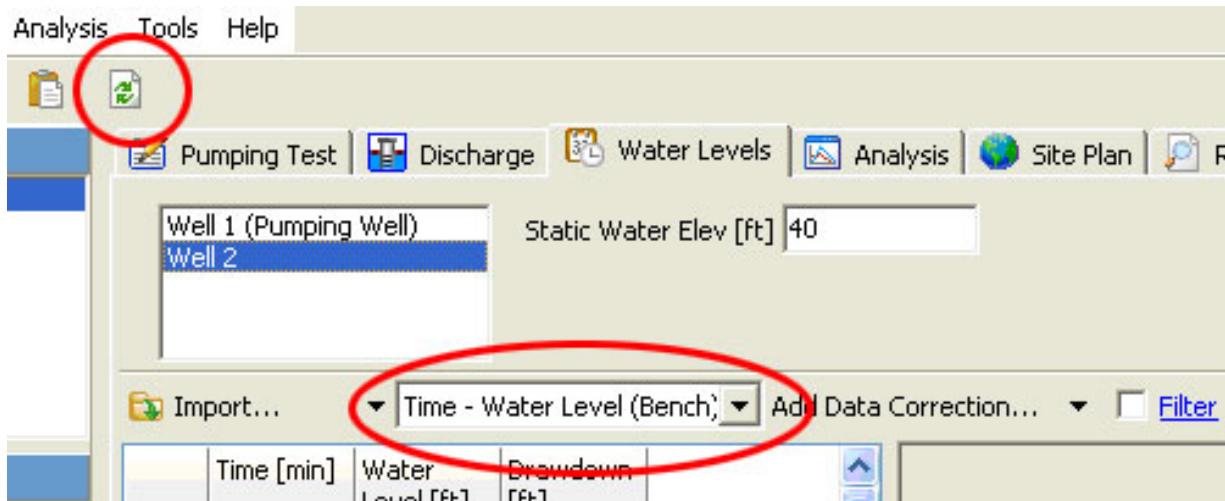
Step 2

On the discharge tab enter the Pumping Well Discharge Rate.



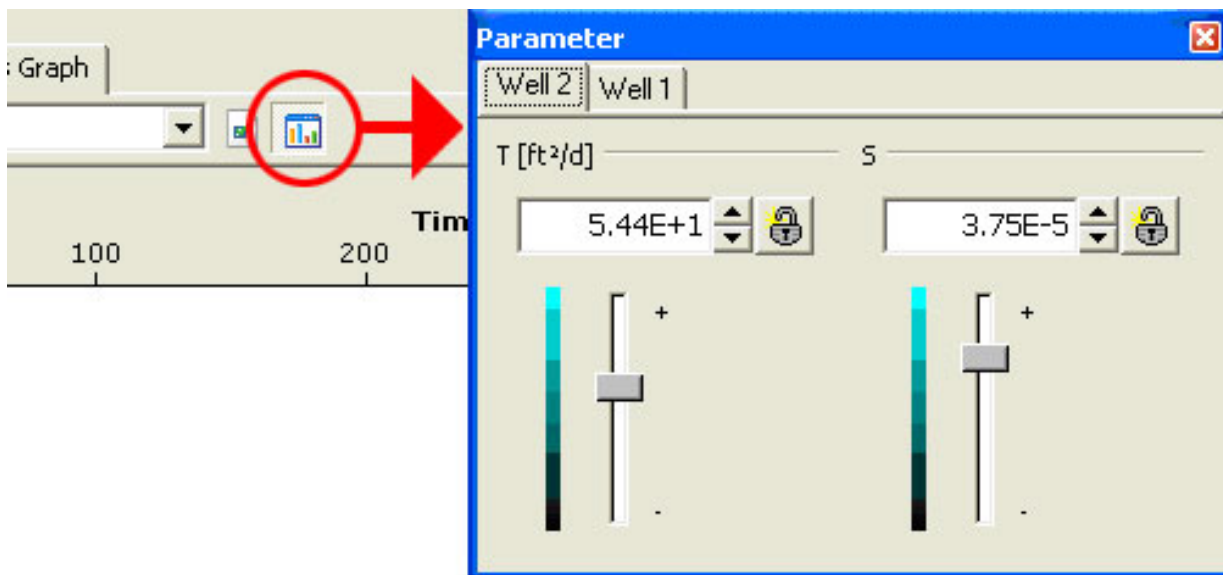
Step 3

On the Water Levels tab select the "Time-Water Level (bench)" option, and import (or enter manually) the Height of Water Column data for the observation well. When prompted for the Static Water Level, enter the water column height before the pumping started (this should be close to the first data measurement). When you click the Refresh button, AquiferTest will calculate the appropriate drawdown.



Step 4

On the Analysis tab you can then use the Parameter Controls to adjust the fit.



For more information, please contact:

Phone: +1-519-746-1798

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Website: www.waterloohydrogeologic.com/consulting/support.htm

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For more information about Schlumberger Water Services, please visit: water.slb.com

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