

AquiferTest Pro 4.2



NOW FEATURING...
Powerful and quick analysis methods
Convenient importing of field data

The industry choice for pumping test and slug test data analysis

AquiferTest Pro*, a popular software package available for graphical analysis and reporting of pumping test and slug test data, now includes more functionality and more features requested from our users. Designed by hydrogeologists for hydrogeologists, AquiferTest Pro expands the available solution methods and improves GIS support, mapping, and reporting.

4.2 Highlights

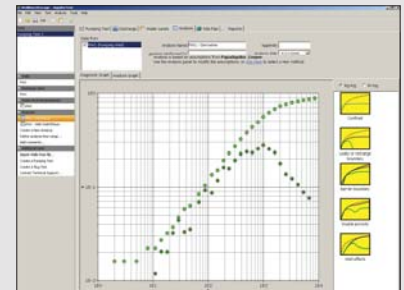
AquiferTest Pro v. 4.2 now incorporates several high-demand analysis methods to give you even more choices, increased functionality, and the ability to quickly create your pumping test and slug test reports.

- **Hantush Bierschenk (1964)** - Step drawdown test and analysis of well losses with two options:
 - Analyze discharge-water level data for step tests, where steady-state is reached
 - Enter the time-discharge data and time-water level data, and extrapolate discharge-water levels for step tests, where flow is at an unsteady-state
- **Moench Fracture Flow (1984)** - Analysis of fractured aquifers with a fractured skin
 - Select from Transient or Pseudo-steady state block to fissure flow model
 - Select sphere or slab block geometry
- **Hantush (1960)** - Leaky aquifer, unsteady-state flow and accounts for storage changes in the aquitard
- Export drawdown contours to polyline shapefile (geometry and attributes)
- Export well locations to points shapefile (geometry and attributes)
- Import well locations from point shapefile (geometry and attributes)
- Efficiently import data from a wider range of dataloggers including Divers*[®]

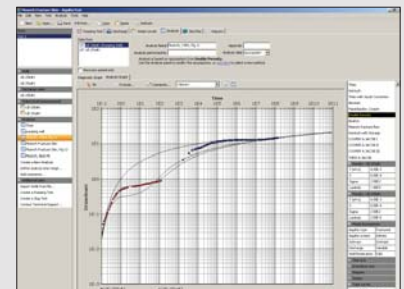
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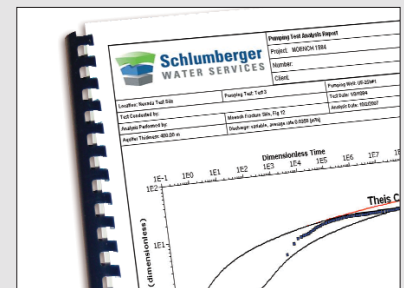
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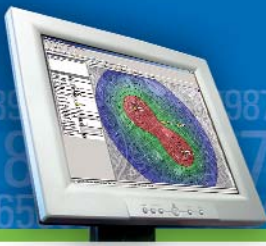
Easily create drawdown derivative plots



Improved fractured flow pumping test analysis



Produce quality pumping test analysis reports



AquiferTest Pro 4.2

Specifications

Applications

- Analyze pumping test or slug test data to predict the hydraulic properties of an aquifer (hydraulic conductivity, storativity, transmissivity)
- Simultaneously create and compare results between numerous methodologies to make better assessments of your aquifer
- Predict water table drawdown at future well locations
- Contour pumping well drawdown and well interference
- Prepare professional pumping test reports

Program Design

- Data entry and analysis are separated into 5 or 6 simple pages (tabs) depending on the type of test used
- Windows XP browser panels can be used as short-cut, or hidden from view
- Export drawdown contours to polyline shapefile (geometry and attributes) **NEW**
- Export well locations to points shapefile (geometry and attributes) **NEW**
- Import well locations from point shapefile (geometry and attributes) **NEW**
- Single file format (SDI application). Files are smaller in size, and more manageable. There is one program window for each file/document. As such, it is possible to open several instances of the program and working on several files (projects) at the same time.
- One descriptive reporting field can be added to each main tab **NEW**
- Position the report field below existing fields, or anywhere on the report **NEW**

Analysis Features

- **Diagnostic Plots:** Compare observed data or drawdown derivative data to standard curves in log-log or semi-log scales, to help determine aquifer type, and diagnose the presence of well effects, boundary effects, leaky aquifer, etc. before running the analysis
- **Display the Statistics of the Fit:** Show the statistics of the best fit line and export to .TXT or .XLS file
- **Analysis Plots:** Choose from Drawdown plot or Type Curve (dimensionless)
- **Automatically or manually fit data to type curves.**

Analysis Conditions and Methods

Conditions

- Confined, unconfined or leaky aquifers
- Fracture flow (Dual Porosity) aquifers
- Fully or partially penetrating pumping wells and/or observation wells or piezometers
- Infinite extent of aquifer or bounded by recharge or barrier boundary
- Isotropic or anisotropic aquifer
- Constant or variable discharge rates
- Single or multiple pumping wells
- Well losses and well bore storage

Current Methods

- Confined: Theis, Theis Recovery, Cooper Jacob (Time Drawdown, Distance Drawdown, Time Distance Drawdown), Cooper-Papadopolos
- Unconfined: Theis with Jacob Correction, Neuman, Boulton
- Leaky: Hantush-Jacob (Walton), Hantush (with storage in aquitard)
- Fractured: Moench, Warren-Root
- Recovery: Theis, Agarwal

New Methods

- Hantush Bierschenk (1964) - Step drawdown test and well loss analysis **NEW**
- Hantush (1960) - Leaky aquifer with storage changes in the aquitard **NEW**
- Moench Fracture Flow (1984) - Analysis of fractured aquifers **NEW**

Well Performance: Specific Capacity, Hantush-Bierschenk

Slug Tests: Bouwer-Rice, Hvorslev, Cooper-Bredhoft-Papadopolos

Drawdown Plots: Time Drawdown, Time Drawdown-Discharge

Data Preprocessing Options

- **Data Trend Correction** - Determine whether water level trends affect pumping test results. Run t-tests on the data set to determine trend significance. The drawdown can then be corrected according to the trends, and corrected data may be used for the calculation of the aquifer parameters.
- **Create and save a custom data trend correction** - Apply to a single or all wells (ex. create a trend correction to account for tidal effects during pumping tests)
- **Barometric Correction** - Import barometric data from the test and calculate the Barometric Efficiency (BE) of the aquifer. Determine if barometric influence was significant or not using t-test analysis. The drawdown can then be corrected according to the barometric effects, and the corrected drawdown data may be used for the calculation

System Requirements

- Pentium II, 300 MHz
- 256 MB of RAM (512 MB recommended)
- DVD-ROM drive • SVGA Monitor
- 100 MB free hard drive space
- Windows® 2000 (SP4) / Windows XP Professional® (SP2) / Windows Vista®

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