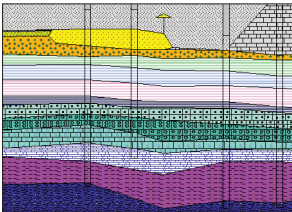
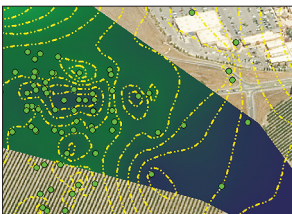


# Hydro GeoAnalyst

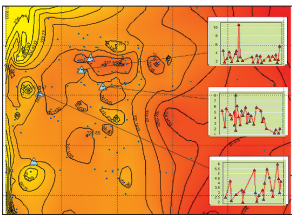
From data discovery to delivery



Flexible cross-section functionalities



Perform color shading and contouring



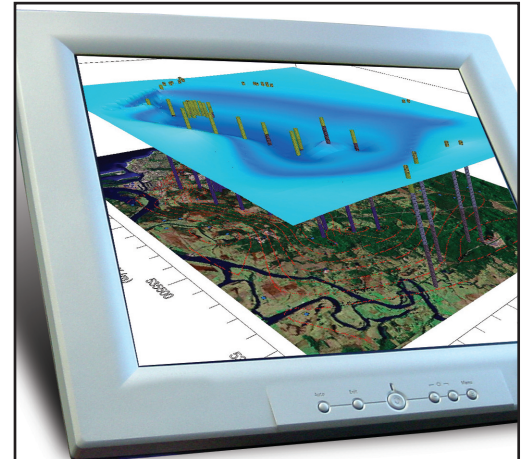
Display summary results in the Map Manager

## Hydro GeoAnalyst can be used with:

- Hydro GeoBuilder\*
- AquaChem\*
- AquiferTest Pro\*
- Visual MODFLOW Pro\*
- Diver\* dataloggers
- HydroManager\*

## Applications:

- Developing comprehensive groundwater resource management plans
- Identifying aquifer vulnerability to agriculture or industrial impacts
- Mapping potential aquifers available for aquifer storage and recovery (ASR)
- Reporting groundwater elevations and water quality data from sanitary landfills and mining sites
- Analyzing and interpreting hydrogeologic data applied in groundwater models



## Overview

Hydro GeoAnalyst (HGA) is a comprehensive data management, visualization, and reporting application designed for efficient management of groundwater and environmental data. With the HGA desktop solution you get the highest level of performance and a completely scalable solution to meet your groundwater project demands! Hydro GeoAnalyst is an all-in-one desktop concept that provides one-click access to many powerful features.

Hydro GeoAnalyst is designed with the user in mind to efficiently manage all sources of groundwater and environmental data. This solution is proven to maximize productivity when investigating and interpreting sub-surface environments, by providing the graphical tools necessary to visually assess and report project data. Hydro GeoAnalyst is used by water supply managers, environmental consultants, urban planners, hydrogeologists and GIS specialists to manage regional groundwater monitoring networks, complete compliance reporting of remediation projects and assess water supply for industrial use. In addition, Hydro GeoAnalyst is ideal for compiling data, analyzing borehole logs and mapping spatial data when planning future water supplies through programs such as aquifer storage and recovery.

Hydro GeoAnalyst embeds industry-standard data models while also offering the ability to expand or modify the data model at any point during the life of the project. This flexibility provides today's professionals with a long term confidence that their investment in developing projects within Hydro GeoAnalyst will be secure and that their data model will not become obsolete with the continuous evolution of policies and technology.

Water professionals now have the ability to make informed and timely decisions while managing groundwater resources. Hydro GeoAnalyst will reduce risk, minimize time spent managing complex environmental data and maximize the user's understanding of the complete sub-surface environment.

## User Access Management

- Application Level - control permissions to features such as creating new projects, backing up and restoring databases, etc.
- Project Level - control access to individual projects and the various tasks (eg. data access, maps, queries, templates, etc.)
- Create and manage user groups (eg. create, edit, delete user groups, and add, remove, edit, users into existing user groups)
- Enforce access levels assigned to each user group

## Data Transfer System

- Flexible data import including Text files (CSV), MS Excel™ (XLS, XLSX **NEW**) MS Access™ (MDB, ACCDB **NEW**), SQL™ Server
- Import data directly into pre-defined database templates for widely used environmental database schemas
- Quickly export data to various formats including text, spreadsheets, MS Access database, SQL Server
- Easy exchange of data between GIS and CAD environments

## Data Exchange

- Import Diver .MON files to display and interpret data
- Exchange data from HGA into AquiferTest Pro to analyze water level data and characterize hydrogeological units
- Link water quality data with AquaChem for in-depth analysis
- Prepare and manage Visual MODFLOW input data in HGA for conceptual model development
- Pre-process data in HGA for use in FEFLOW® geologic models
- Link to Isatis<sup>1</sup> software for Advanced 2D Interpolation and Analysis **NEW**

## Queries

- Develop advanced queries for virtually any parameter
- Export crosstab queries to PDF, HTML, or MS Excel™ format
- Efficiently map query results directly to the Map Manager
- Quickly generate simple or complex data statistics

## Time Series Plotting

- Create time-series plots based on data queries
- Add best fit, trend, formula, or statistical lines to the plot
- Display uncertainty or detection limits
- Interactive, simultaneous display of multiple plot windows
- Display one or more water quality standard values as a line or symbol, for quick detection of samples that exceed the standards

## Quality Control

- Analyze duplicate, spiked and blank samples:
  - Compare relative percent difference and coefficient of variation
  - Analyze percent recovery for spiked samples
  - Compare blank samples to method detection limits
- Save assessment results to a MS Excel™ spreadsheet
- Compare sample holding times, detection limits and dilution factors against user-defined quality acceptance standards **NEW**
- Automatically identify and flag samples that do not meet user-defined quality acceptance standards **NEW**
- Monitor unit inconsistencies and filter anomalies

## Chemistry Data

- Create sample schedules including sample locations, media, dates and parameters to be measured
- Chemistry data import wizard: Import sample id data and result values in a one easy step **NEW**
- Import analytical lab results from many file formats
- Seamless data validation and error checking during data import
- Display concentration data on time-series plots
- Conduct statistical analysis on your chemistry data using standard functions (AVG, MIN/MAX, STDEV, SUM, VAR, etc.)
- Display summary results with exceedences highlighted on a map

## Map Manager

- Create and export colour shaded maps to display data
- Display timeseries plots linked to stations on maps
- Choose intersecting layers to create new layers
- Group layers in the legend to help simplify management
- Create contours using selected stations and/or restrict the lines to a digitized shape
- Improved legend for displaying layer details with graduated or value rendering
- Perform on-the fly datum conversions
- Send high-resolution scaled maps to the Report Designer **NEW**
- Add grid lines to maps to pinpoint exact locations of interest
- Import maps with accuracy using two to three georeference points
- Import and display raster data (DEMs, Surfer and ESRI® grid files)
- Import an array of basemap formats
- Quickly contour data from pre-defined queries or station data
- Interpolate any data layer(s) and generate grided data files
- Display summary results on map in a tabular format, and modify display properties of table (color, style, fields)
- Flexible placement and adjustment of labels for wells/points layers **NEW**
- Display secondary labels for well locations (eg. name, water level) **NEW**

## Cross-Section Editor

- Import cross-section lines from shapefiles
- Modify cross-section buffers, axis or vertical exaggeration
- Pan and zoom while defining cross-section lines and snap lines to stations with a click of the mouse
- Display intersecting cross-sections and features for accurate representations
- Print high-resolution cross-sections in the Report Designer
- Use DEM data to display true topography between wells
- Create geological, hydrogeological, and model interpretations
- Interpret model layers for use in groundwater models
- Query and map interpretation results (eg. overburden thickness)
- Display borehole logs and geophysical plots to assist in interpretations
- Display multiple surfaces on cross-sections (eg. water table, MODFLOW model layers, bedrock layer) to assist in correlation and QA/QC **NEW**

## Borehole Log Plotter

- Display well nests, reducers and telescoping casings
- Display selected water levels (max, min, avg, first, last, etc.) with customized symbols
- Display annular fills in boreholes and between piezometers
- Customize display settings (casing color, image patterns etc.)
- Display multiple data series on a single borehole log plot column to better display depth profiles for multiple contaminants, downhole geophysical logging data, or other depth dependent data
- Borehole logs are mapped directly from the data source
- Choose from a selection of pre-designed borehole log templates

## HGA 3D-Explorer

- Render colorful, high-impact, 3D cross-section views
- Display 3D plumes directly from source data
- Generate static or transient plumes for one or more contaminant(s)
- Create .AVI animation files for use in presentations
- Calculate volumetric results based on the isosurface values
- Display concentration color maps and contours along a cross-section line or horizontal YZ, XZ plane, and specify cut-off limits
- Display 2D surfaces with color shading or contours

## Report Editor

- Create and save unlimited number of dynamic report layouts
- Incorporate data values, tables, logs, cross-sections, 3D views, maps, etc.
- Export reports to various file formats (eg. PDF, HTML, RTF, etc.)
- Dynamic linking of reports to HGA data and components automates the report creation process
- Supports MS Visual Basic™ Script and JavaScript events/expressions