Hydro GeoAnalyst

Environmental Data Management & Visualization Software

Hydro GeoAnalyst (HGA), developed by Waterloo Hydrogeologic, is a secure and comprehensive environmental data management system (EDMS), visualization, and reporting system designed for environmental professionals. It seamlessly integrates a customizable database structures with cutting-edge tools for meaningful data management, interpretation, visualization, and reporting. HGA serves as a complete solution for hydrogeological and environmental data management that greatly enhances stakeholder knowledge and support in decision-making.

Why Choose HGA?

Total Data Control

HGA Data Management Modules allow you to customize the database structure to accommodate project needs and scale as data volumes grow. Its integrity and structural tools ensure data quality goals are met.

Get More out of Plus

The premium edition, HGA+ includes specialized modules for working with geochemical data, including tools for unit conversion, geochemical functions, specialized plots, reporting and compliance tools, integrated geochemical modeling via PHREEQC, and scripting via the R-Console.

Gain Insight Into Your Data

Collected data is only truly useful if you can easily and efficiently visualize and evaluate it. HGA is based on a centralized database structure paired with integrated tools for the geosciences tools like Map Viewer, Cross Section Viewer, Well Profile, Scene Viewer, and Plot Collections allow you to gain a complete picture of your projects. Reporting tools allow you to quickly generate reports, figures, plots, well/borehole profiles, cross sections, maps, and 3D scenes. Use the database as a source for customized Power BI reports.

Collaboration/Cross-Platform Support

Easily manage security and access levels for efficient collaboration. You can easily integrate the HGA database with other systems for automated data entry, dashboards, and more.

Hydro GeoAnalyst's Wide Range Of Users

Mining Professionals

HGA is used by a number of the world's largest mining companies as their enterprise solution for EDMS, in support of active mining operations:

- Easily access changes in water quality and compliance.
- Interpret and display accurate geologic and subsurface conditions.
- Prepare permits, compliance, and ESG reports.
- Easily manage data from multiple mine sites at once.

Government Agencies

HGA is used by a number of government agencies around the world from municipal to federal levels to help regulators and legislators accurately define and manage policy and regulations:

- Map environmentally sensitive areas.
- Track compliance with environmental regulations.
- Characterize subsurface environments, identify risks, and develop long-term plans.

Environmental Consultants

HGA provides engineers and consultants with a complete set of tools to satisfy the needs of their clients:

- Interpret and display accurate geologic and subsurface conditions.
- Create complete soil and water reports for remediation sites.
- Manage data monitoring programs including water levels and concentrations.
- Develop site conceptual models to facilitate communication and model development.

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Data Management Modules and Features

SQL Backend: HGA projects are backed by Microsoft SQL Server, including all its built-in scalability, performance, and security features.

Template Manager: HGA is the only EDMS with an integrated interface that allows you to easily customize each project database to your specific project needs with options to add unlimited tables and fields. Quality requirements can be added to specific fields so that only high-quality data can be stored.

Data Import: Easily import and validate data from delimited text, Excel, Access, EDDs and Mobile EDDs, Diver MON files, LAS files, or bulk load images. Imported data is validated for quality and consistency.

Data Viewers: Edit, manage, tabulate, search, and filter your project data using integrated data viewers and list specifically designed to work with your data based on your project-specific needs.

Query Builder/Viewer: Create, execute, and view the results of custom queries to interrogate your data using an intuitive interface that does not require knowledge of the SQL language.

Lab QA/QC: Verify the accuracy of laboratory results through the analysis of blank, duplicate, matrix spike samples, dilution factors, detection limits, and holding times.

List Editor: Create required and optional lists of valid values for almost any field in your database for consistent and reliable data entry.

Material Specification: Create, edit, and manage material specificiations and patterns for use in your borehole logs, well completion reports, cross sections, and 3D scenes.

Analysis/Interpretation Modules and Features

Plot Collections: Create and organize plots based on dynamic queries of your data, including Box and Whisker, Scatter, Time Series, Histogram, and many more types.

Map Viewer: Create detailed maps based on a live connection to your data. Visualize stations, add detailed plots, and interpolate contours of the water table elevation, potentiometric heads, or concentrations of constituents of concern.

Well Profile: Display detailed well/station information to develop customized borehole and well completion logs based on depth/interval data, including descriptive text, symbols and plots.

Cross-Section Viewer: Produce detailed cross section diagrams showing geologic, hydrogeologic, and model layer interpretations as well as screen and water level data from overlain well profiles

Scene Viewer: Display your project data in 3D quicker and easier than ever before, including fence diagrams, animated plumes, deviated (non-vertical) wells, surfaces, draped basemaps, and more.

3D Interpolation: Interpolate data in three spatial dimensions and by time to estimate, visualize, and animate the spatial and temporal variability of distributed data.

AquiferTest Link: Easily send your pumping test data to be analyzed, interpolated, and visualized in AquiferTest (installed/licensed separately).

Collaboration Modules and Features

Data Integration: Connect directly to the project data base using other applications such as Power BI to create live dashboard or ArcPro for advanced geospatial analysis and mapping.

User Management: Manage and control the different levels of user access for each member of your extended team. HGA's use of MS SQL Server as a backend ensures that HGA projects are kept safe by the latest in security encryption.

Event Planner: Easily plan future sampling events and other field activities, schedule recurring sampling rounds, and set automatic reminders to ensure a sampling round is never missed.

Mobile EDD: Quickly build reusable data collection forms for the companion mobile app that streamlines the data collection process for field staff improving the quality and integrity of your data.

Quick Checker: A standalone utility that can be shared with project stakeholders to streamline importing data from external sources by validating inbound data against your data quality and integrity criteria.

Print-To-Office Reporting: One-click client-ready reports, figures, and graphics from data views, plot collections, well profiles, map views, and 3D scenes using MS Office template documents.

Hydro GeoAnalyst Plus (HGA+) Modules and Features

Sample List: Manage and view samples and related results. Leverage the power of the Query Builder to define dynamic lists of samples for use throughout the application.

Parameter Editor: Define how parameters are used across your projects. Ensuring consistency from collection through analysis and reporting – allowing you to dynamically switch measurement units (e.g. from mg/L to meq/L).

Water Quality Standards: Import, manage, and update any number of standards to compare against sample data. Easily find and manage exceedances.

Functions: Over 50 built-in functions and converters that allow you to perform, quick on-the-fly analyses on your water quality data, including dynamic unit conversion, ionic functions, corrosion and scaling indices, isotope calculations and more.

Sample Reports: Build customized analytical data reports for dynamic sample sets including statistics and comparisons to one or more active standards.

PHREEQC: Run geochemical simulations via integrated cross-functionality with PHREEQC, the popular geochemical and speciation modeling program developed by the USGS.

R-Console: Allows you to develop and run scripts in the R language and leverage the thousands of available libraries that facilitate data analyses, visualization, categorization, and much more.

Plot Collections (Extended): Create plots based on dynamic data sets. Support for 9 geochemiInteractivecal specific plots in addition to those available in HGA's standard plot module.

Map Viewer (Extended): Create maps based on a live connection to your data. Includes support for all plot types and interactive selection of sample data.

Waterloo HYDROGEOLOGIC

Software Solutions For Groundwater

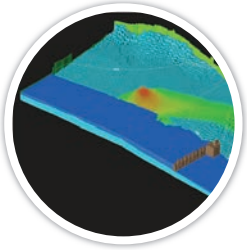
At Waterloo Hydrogeologic, we offer a comprehensive suite of applications that meets the needs of any groundwater project: from data management to analysis of hydraulic and geochemical properties, modeling/simulation, visualization and reporting. Our modern hydrogeologic toolset will help you fast-track your groundwater projects with more efficient and robust evaluations and help provide decision makers withclearer and more defensible insights.

With an over 30-year history of trust by industry professionals, our industry-leading software is used by consultants, regulatory agencies, industry, and educational institutions in over 100 countries.

Visual MODFLOW Flex

3D Groundwater Flow And Transport Modeling And Analysis

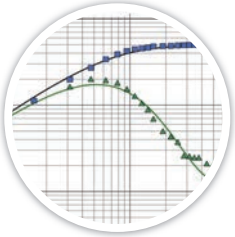
The industry-standard 3D groundwater flow and solute transport modeling interface for developing USGS MODFLOW models. Flex integrates numeric engines, conceptual modeling, advanced 2D/3D visualization, and calibration tools in a single application.



AquiferTest Pro

Pumping & Slug Test Analysis And Interpretation

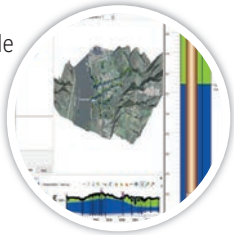
The easy-to-use software package for analysis, interpreting and visualizing pumping and slug test data. AquiferTest Pro offers all the tools needed to accurately interpret data from all types of aquifers in all types of test conditions.



Hydro GeoAnalyst

From Data Discovery to Delivery

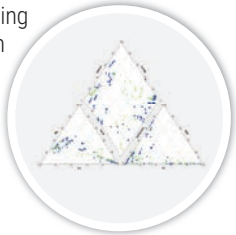
The most comprehensive and customizable environmental data management system available on the market. Used around the world, HGA's secure and easy-to-use modular interface integrates customizable database structures with state-of-the-art tools for data management, interpretation, statistical analysis, mapping, charting, 2D/3D visualizations, and automated reporting. It scales from individual practitioners to government agencies and large multi-national industrial clients.



AquaChem

Water quality analysis and geochemical speciation modeling

The go-to application for managing and evaluating geochemical and water quality data. AquaChem features a fully customizable database of physical and chemical parameters with integrated plotting, mapping, scripting, and reporting tools, along with a seamless integrated interface for PHREEQC, the popular USGS model for geochemical speciation.



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