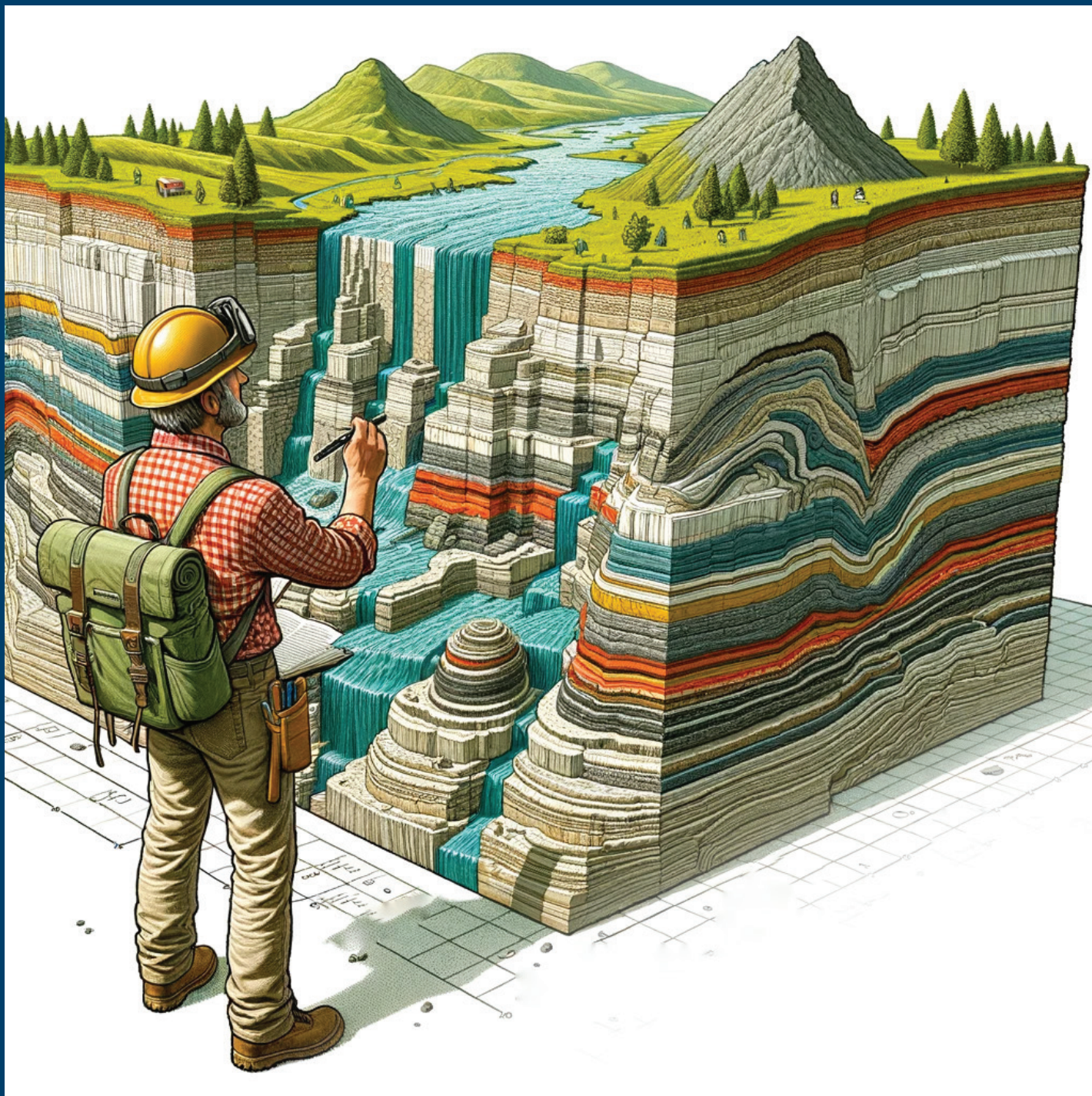
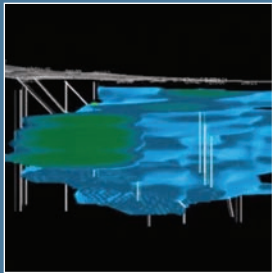


Geoscience Software, Consulting & Training For over 41 Years

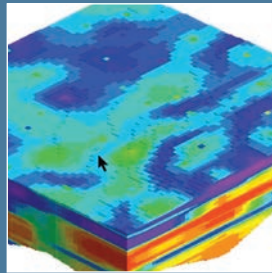


RockWare Knowledge Base

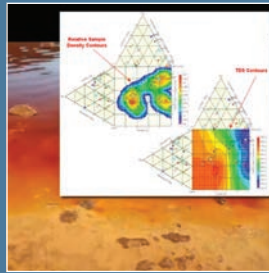
Watch hands-on training exercises, industry specific applications, new features, webinars and instructions at https://www.rockware.com/support/knowledge_base/



RockWare Litigation Support



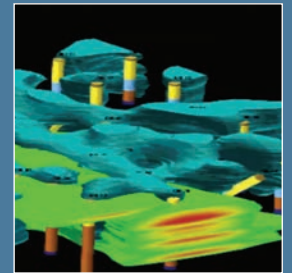
RockWorks Overview



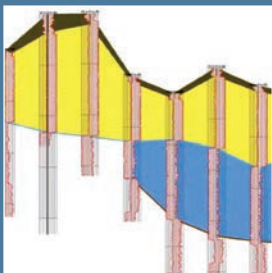
Hydrochemistry



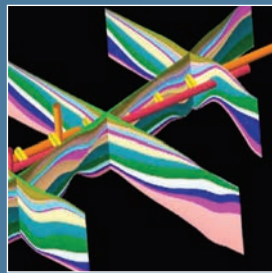
Groundwater Contamination



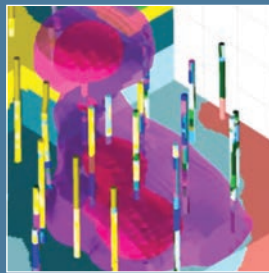
RockWorks New Features



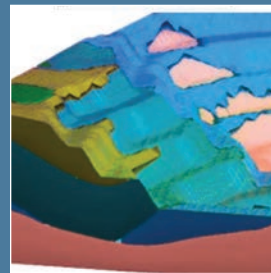
Hydrocarbon Exploration



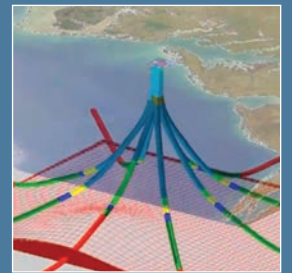
Tunneling



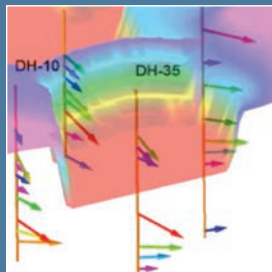
Landfills



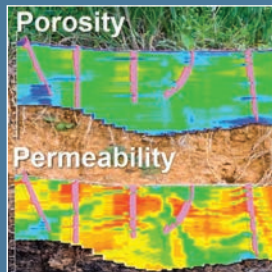
Industrial Minerals



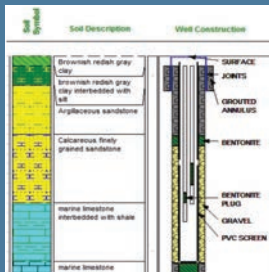
Oil & Gas Production



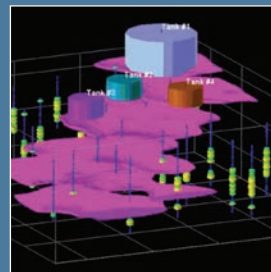
Dam Sites



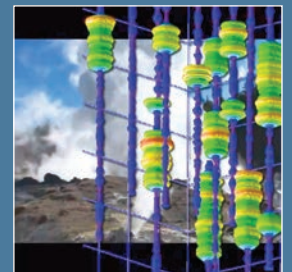
Geotechnical Soil Investigations



LogPlot Overview



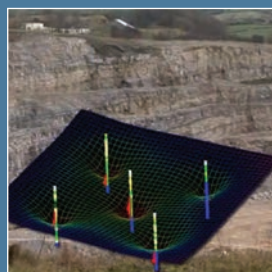
Contaminant Plume Modeling



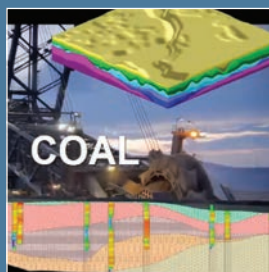
Geothermal



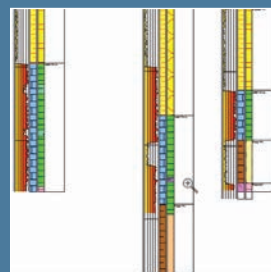
Mining



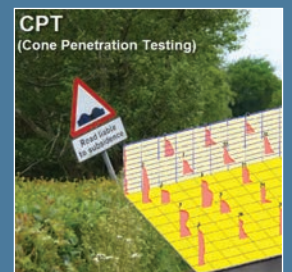
Groundwater



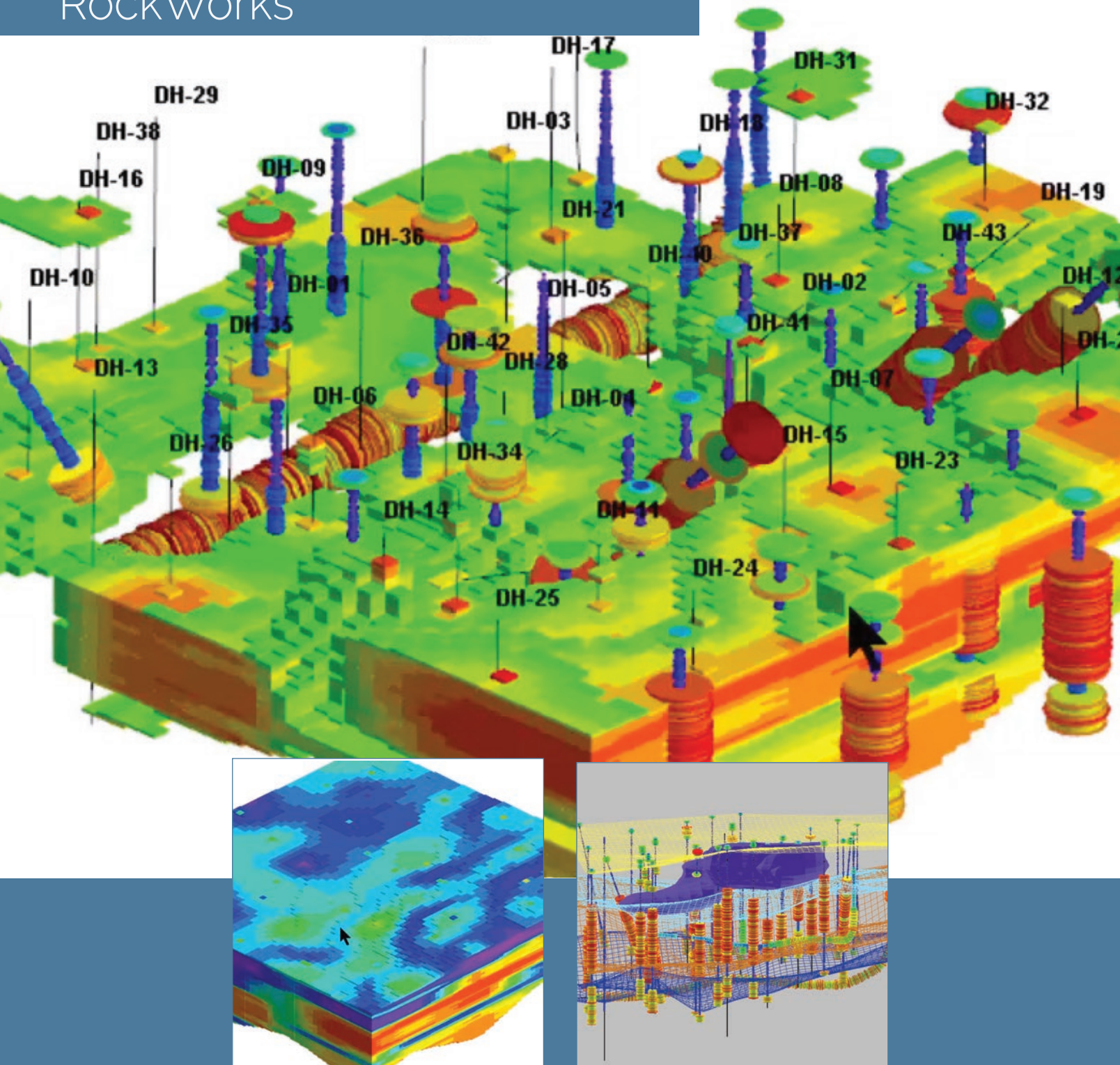
Coal Multi-Seam / Multi Attribute Modeling



Training Videos



Cone Penetration Testing



RockWorks® is a comprehensive program that offers visualization and modeling of spatial data and subsurface data. Whether you are a petroleum engineer, environmental scientist, hydrologist, geologist or educator, RockWorks has what you need.



RockWorks contains tools that will save time and money, increase profitability and provide you with a competitive edge through high-quality graphics, models and plots. See what's new!

New Features

Mapping

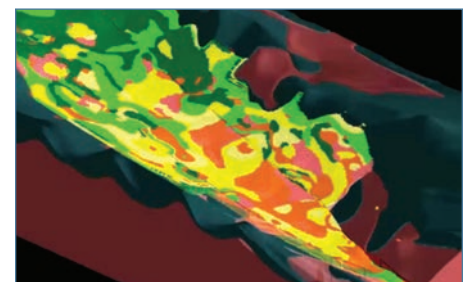
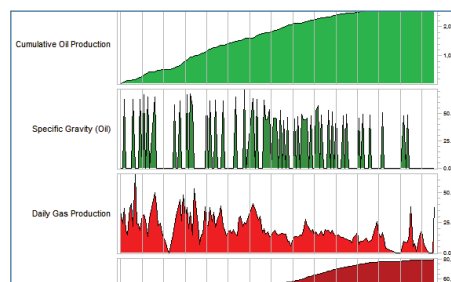
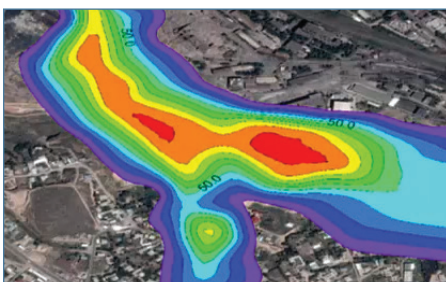
- The Peripherals menu that is embedded within all programs that generate two-dimensional diagrams (maps, sections, graphs) has been completely re-designed and enhanced with more realistic and dynamic previews.
- New "Proportional Shapes" tool can plot colored and scaled circles, triangles, squares, diamonds and stars based on data stored in the Datasheet or Borehole Manager.
- The Minor Intervals of Horizontal and Vertical dividers can now be disabled under the Labeled Axes settings for maps.
- The Labeled Axes options now include options that determine if the labeled intervals will be parallel or perpendicular to the associated axes and an option that determines if labels that extend beyond their associated axes will be plotted.

Logs, Sections and Profiles

- When importing an LAS file, in the LAS File Import Wizard | Options for the required borehole data, we have added an input field for Collar Elevation.
- The Section, Profile, and Fence selection map now has scroll bars to move around when zoomed in.
- Titles for 3D Striplogs can now be plotted horizontal, vertical or at a 45 degree.
- Users can now specify the minimum and maximum colors for I-Data and T-Data in 2D logs; and I-Data, P-Data and T-Data in 3D logs.
- Profile and Projected Section creation speed has been significantly improved, especially in projects with a large number of boreholes.
- The "Override Automatic Titles" option within the Parallel Profile menus (used by a variety of programs) has been improved.
- The Vertical Offset for columns in a 2D Striplog can now accept negative values, allowing for overplotting columns in striplogs

Borehole Manager Database

- The Borehole Map options now include an option that determines if stratigraphic information labels will be plotted adjacent to the borehole symbol or at the plan view downhole locations.
- Borehole Manager: View | Change Sorting — now shows the current sorting of the borehole titles.
- In the Borehole Manager's datasheets such as Lithology, Stratigraphy, etc. You can click on the title of a column to sort by that column.
- Project images can now be saved for the full project and Subsites.
- The Datasheet Transfer | Strat -> Borehole program now works with depths as well as elevations.
- New Solid -> P-Data Export extracts data from a solid model along a borehole trace and stores the data in the P-Data table of the Borehole Manager Database. The primary purpose of this program is to predict what will be encountered within a proposed borehole.
- The Spatial Filtering tools now include a Depth filtering options that can be used to filter data in the Borehole Manager database.





Stratigraphy/Lithology

- The time required to compute the lithology volumetrics (i.e. the "Include Volumetrics" option within the Lithology | Solid Model program) has been significantly decreased.
- A new Tri-layering algorithm for triangulation-based solid modeling of Lithology has been added.
- The "Add Points" option is now available when using the Lateral Blending, Lateral Exclusion, or TriLayering algorithms. This can be used to add surficial geology or other types of surface data to a solid model
- 3D Shapefile exports for Stratigraphic fences and Lithology/Stratigraphy solid models have been improved.

Grid Models

- The GeoTIFF and DEM importers have been improved to support more modern formats and to better detect different coordinate systems.
- A new Bouguer Anomaly program was added that converts gravity observations to Bouguer Anomaly values for subsequent gridding into Bouguer Anomaly contour maps.
- The Kriging interpolation algorithm now includes a Single Spoke setting where a single 360 degree spoke will be used during variogram creation.
- The new "Gridded XYZ -> Grid" program creates a grid by reading XYZ data from an ASCII text file or the RockWorks Datasheet. The grid will be populated by simply assigning z-values to the closest grid node, allowing for null areas where XYZ data is not present.
- A Directional First Derivative calculator has been added to ModOps | Grid | Math.
- User can now specify separate XY node densities for gridding when selecting Variable—Manual Grid Dimension settings.
- The status of faulting is now stored in the grid header so that faulting will be turned on during the contouring of existing grids.

Solid Models

- The Solid Modeling Directional Algorithm now contains four sub-algorithms, allowing for Automatic, Line-Based, Polyline-Based and User-Defined biasing.
- The Solid Model Declustering method has been simplified in order to ensure that the points created are centered on the voxel. This enhances the honoring of high and low values and improves modeling speed.
- The Pit Optimization program now offers the option to represent unmined vertical pedestals in the excavation surface. This is done using a Boolean grid representing the location of pedestal polygons.
- The new "IDW Layered" solid modeling algorithm is designed to quickly model large datasets that represent horizontally layered (but laterally discontinuous) materials.
- A new option titled "Envelope" has been added to the solid modeling Special Options menu. The Envelope option will limit the modeling to a 3D convex polyhedron that confines the control points.
- Solid modeling programs now include a submenu that provides a means for computing the volume of voxels whose g-values fall within up to five different specified ranges. This allows the user to more quickly determine the volumes of contaminants, ores, hydrocarbons, etc. within a solid model.

RockPlot2D and ReportWorks

- Many improvements have been made to RockPlot2D Color, Pattern and Index legends.
- RockPlot2D now includes a text search which allows users to find Boreholes or Data Points by their labels.
- RockPlot2D Scalebars can now display with Meters converted to Feet or Feet converted to Meters and can be displayed with an opaque background.
- The RockPlot2D start up mode can now be changed from Zoom mode to Edit mode through the RockPlot2D Options. This controls what the first click in a new RockPlot2D window will do.
- Raster and PDF exports from RockPlot2D can now be assigned a user-defined width and height. The vertical exaggeration for the image will be adjusted to match the desired image dimensions.
- ReportWorks includes many new and improved export options, including a new PDF export.
- A right-click option was added to 'Modify Selected Text' in ReportWorks for text drawn all on the same layer.



RockPlot3D

- The RockPlot3D toolbar now has 4 buttons that allow the user to select from fixed above view-points (SE, SW, NE, NW) without resetting the zoom or translation points.
- It is now possible to specify the "tolerance" when specifying the color that is to be considered transparent when plotting raster images (e.g., cross-sections) within the RockWorks 3D viewer.
- The drawing of vertical and horizontal slices in solid models has been improved to show clearer contours and contacts.

Help and Documentation

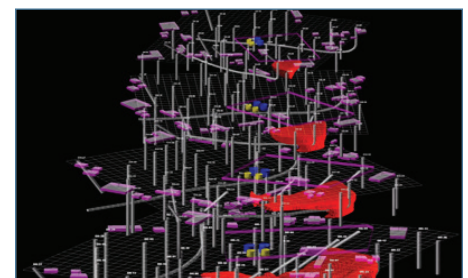
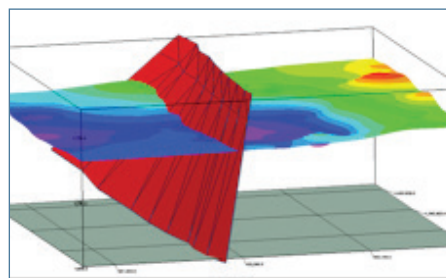
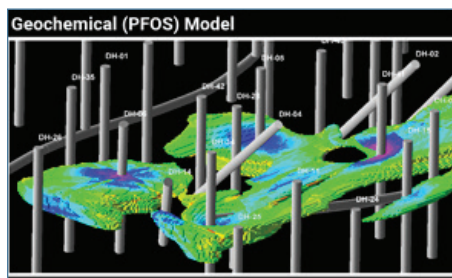
- A new Graphical Listings display option has been added to the "How-To" menu. This displays an array of graphical thumbnails for each How-To topic, rather than the more traditional Textual Listing
- A new "Search Tree" button has been added to the How-To Textual Listings menu. When clicked this will highlight any items within the topic outline that contain the search term.
- New Video Instructions are now embedded in the Help menu of many of the Borehole Manager tables
- Detachable embedded help menus now allow information to be more easily displayed on a separate screen.

Utilities

- A program titled "3D Tags" has been added to the Graphics | 3D Tools menu group. This program is used to add item annotation to 3D diagrams.
- The Histogram programs now include options for plotting two vertical threshold lines at user-specified magnitudes within the diagram.
- The Line Survey -> XYZ program converts geophysical survey data from a line-based format into a XYZ format suitable for three-dimensional display and modeling.
- A new program called "GeoCylinders" has been added to the Utilities | 3-D sub-menu. This program is used to plot geologic units encountered within boreholes or measured as color-coded vertical cylinders based on data stored in the Datasheet.
- A program titled "Replace Text" has been added to the Utilities | Misc sub-menu. This program will merge an unlimited number of ASCII text files that are listed within a RockWorks datasheet into a single output file and will allow for "target" strings to be replaced with "replacement strings". The target audience for this program are users who want to create Playlist templates and then populate copies thereof with project-specific content.

Miscellaneous

- A new "color picker" has been added to most RockWorks menus. This allows you to select a color display anywhere on your computer screens to use as input in the menu
- The INI selection menu that appears at startup now provides a means to delete INI files for users who are no longer working on the project.
- The Color Names table can now be edited with new user-defined color systems.
- A suite of new tools has been added to a new tab labeled "Options" within the Utilities | 3-D | Tubes program. These options include the ability to wrap images around the tubes.
- Animations now include progress bars that allow users to track progress and prematurely terminate the process.





Program Automation

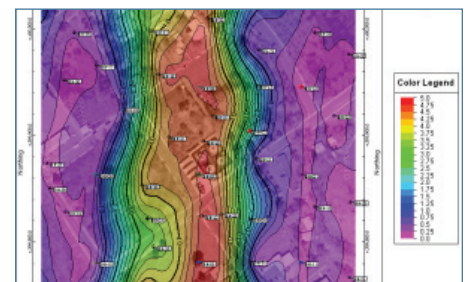
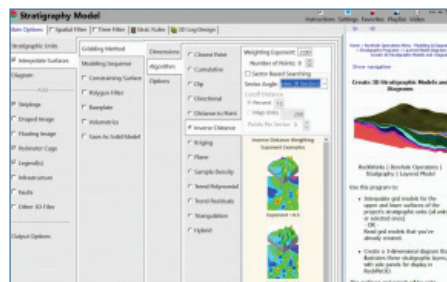
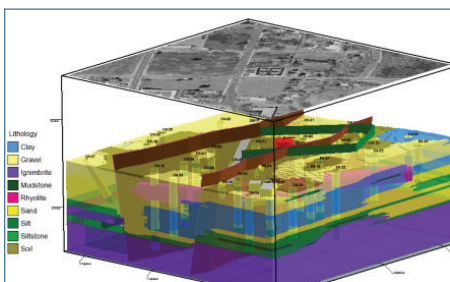
The RockWorks Playlist offers easy automation—just click a button to add a program to the current Playlist. Then, click a button to run your Playlist to create models, maps, diagrams while you have lunch. Available for Basic (5 items), Standard (5 items) and Advanced (unlimited items).

The Playlist provides:

- A **memory aid** for projects that are infrequently re-visited.
- An **audit trail** to serve as a record of what was done and all of the associated menu settings.
- **Turn-key tools** for colleagues or clients who need to use RockWorks capabilities without any downtime spent learning how to use it.
- A **template** for processing different data sets/sites using a streamlined workflow.

Recent Playlist Improvements:

- The **Playlist output tabs** have been revamped. Double clicking on a playlist output tab will detach the page into a separate dialogue that fills the main monitor.
- When making a **change to your playlist** in a text editor, you will be prompted to write it back to the current Playlist or save to a new one.
- The Playlist / **Dimensions options** now include a button that will copy the current project dimensions into the respective fields.
- A new **Subsite** option has been added to the Playlist / Add sub-menu. This option provides a means for switching to sub-sites within a Playlist.
- Tools for editing Playlists as texts have been improved. Edit your Playlist in an editor and load changes back into the currently opened Playlist.



New & Improved

The image displays the RockWare software interface, highlighting several key areas:

- Title Bar:** Includes 'How-To', 'Textual Listing', and 'Graphical Listing' options.
- Search:** A search bar for finding specific tools or data.
- License:** Information regarding the software license.
- Plot2D:** A toolbar for 2D plotting, including options for Import, Export, and various file formats like BMP, JPEG, PNG, and PDF.
- Plot3D:** A toolbar for 3D plotting, including options for Import, Export, and various file formats like AVI, GIF, and PDF.
- Animations:** A section for creating and managing animations.
- Report:** A section for generating reports, including options for File, Print, and Export.
- Window:** A section for managing windows, including Preferences, Edit, and Import/Export options.
- Help:** A section for accessing help resources, including Contents, Tutorials, and Case Studies.
- Updates:** A section for checking for software updates.
- Support:** A section for accessing support resources, including a Support Page and User Group Forum.
- Download:** A section for downloading additional resources, including Google Earth and RockWare datasets.
- Links:** A section for accessing external links, including RockWare website, blog, and social media pages.
- Miscellaneous:** A section for miscellaneous tasks, including Database Structure and Execution History.
- About:** Information about the software version and developer.
- Layout:** A section for customizing the software layout.
- Project Bar:** A section for managing project folders, including options for New, Open, and Recent Projects.
- Subsite:** A section for managing subsites, including options for Full Project and Edit Subsites.
- Project Settings:** A section for configuring project settings, including Summary, Dimensions, and Scan Boreholes.
- Fill Project:** A section for filling project data, including options for Scan Datasheet and Import.
- Export:** A section for exporting project data, including options for Statistics and Preview.
- Show in Google Earth:** A section for viewing project data in Google Earth, including options for Plot Project Perimeter and Drape Project Perimeter.
- Identify Overpopulated Cells:** A section for identifying overpopulated cells in the project data.
- Coordinates:** A section for managing coordinates, including options for Reassign and Reproject.
- Units:** A section for managing units, including options for Image and Select.

Color Legend:

NEW

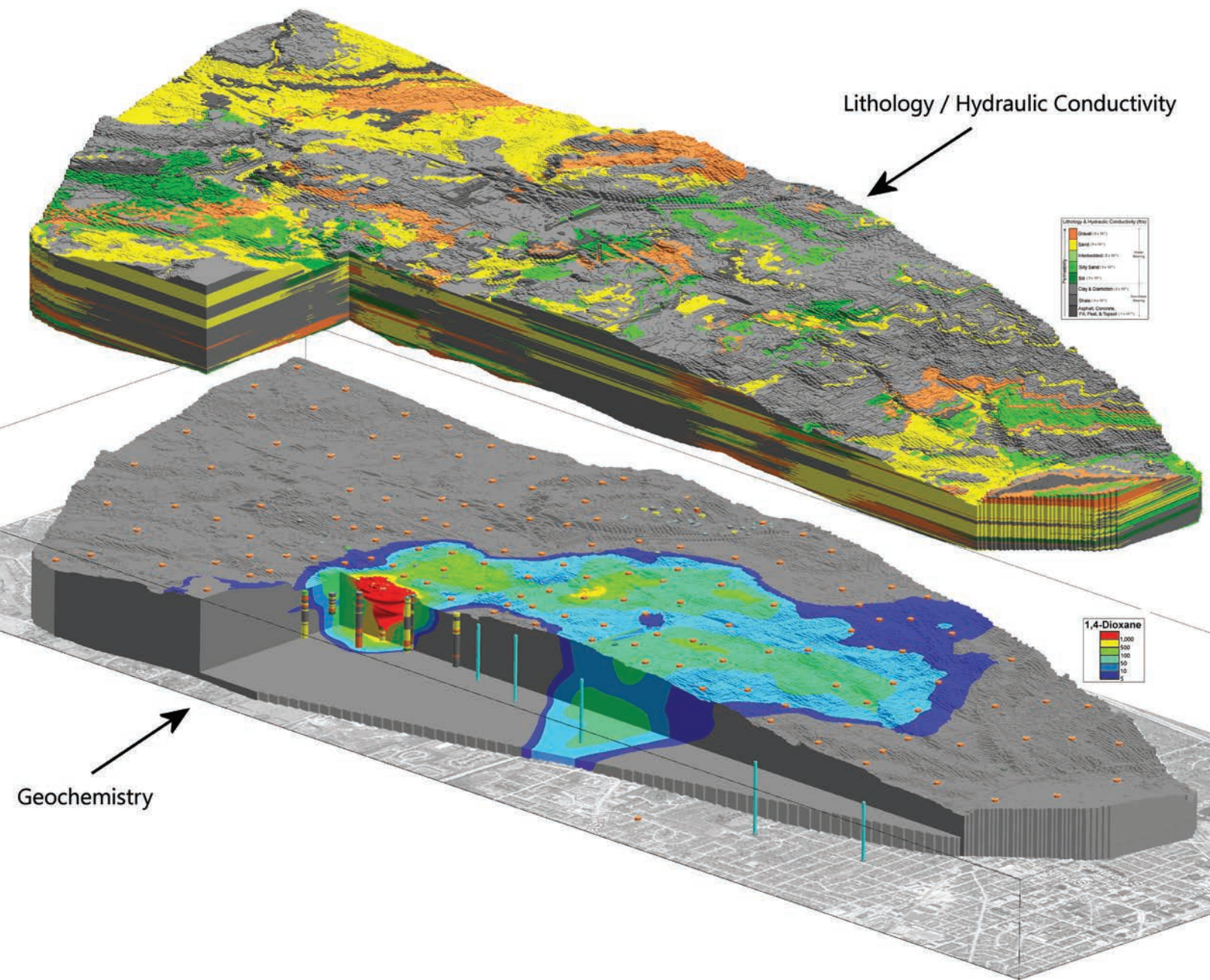
IMPROVED

- Mining Claims
- Oil Leases
- Land Grid
- 3-D
- Points
- Clips
- Triangulation Surface
- Connected Polygons
- Infrastructure
- Oriented Samples
- Perimeter/Wall
- Polyline/Pipeline
- Tubes
- Horizontal Tubes
- Vertical Tubes
- LIDAR → Triangle Mesh
- Triangle Mesh
- SpherePlot
- 2D Cylindrical - Points
- 2D Cylindrical - Polylines
- 2D Spherical - Points
- 2D Spherical - Polylines
- 3D Sphere - Points
- 3D Sphere - Polylines
- Earth
- Sample Point Icons
- Circles
- Cones
- Cylinders
- Mining Claims
- Oil & Gas Leases
- Public Land Grid
- Polygon - Single
- Polygons - Multiple
- Predefined Polygons
- Lineations
- Polyline - Single
- Polylines - Multiple
- Parabolic Arrows
- Parabolic Lines
- Pipeline - Single
- Pipelines - Multiple
- Tubes
- Survey → Points
- Survey → Polygons
- Hydrology
- Drawdown Calculator
- Drawdown Surface
- Drawdown Grids
- Hydrograph
- Flowpath Tubes
- Hydrochem
- Durov
- Piper
- Schoeller
- Stiff
- Stiff Map
- Ion Balance
- Total Dissolved Solids
- Ion Report
- Linears
- Rose (From Bearings)
- Rose (From Endpoints)
- 2D Endpoints → Bearing Etc.
- 3D Endpoints → Bearing Etc.
- 3D PrismGram
- 3D Urchingram
- Planes
- Stereonet
- Planes → Spherical Net
- Strike & Dip Map
- 3D Strike & Dip Discs
- Google Earth Dip Symbols
- Google Earth Dip Discs
- Contour 3 Points
- 3-Points → Dip
- Beta Intersections
- Beta Pairs
- Polylines → Planes
- Rotate Dips
- Strike → Dip Direction
- XYZ & Dips → Profile
- Stats
- Univariate
- Normalize
- Standardize
- Histogram
- Histogram Matrix
- Scattergram
- Ternary
- Ternary Map
- XYZ Pair Stats
- Variography
- Sieve Analysis
- QAPF Diagram
- Volcanic Classification
- Random
- Survey
- XYZ
- Map
- 3D
- Panels
- Tubes
- Triangulation
- Setup XY Stations
- Interpolate Points On Line
- Survey Data → KMZ Points
- Survey Data → KMZ Polygons
- Movement Analysis
- Mining Claim Area
- Oil Lease Area
- Coords
- Quick Locator
- Convert Point
- Convert Points
- Polar → XY
- XY → Polar
- XYZ → Polar
- Azimuths → Quadrants
- Quadrant → Azimuth
- Rescale XY Data
- Rotate XY Data
- Shift XY
- Public Land Survey → XY
- Local Origin Lon/Lat
- Dates → Startdates
- Merge Time-Stamped Data
- Widgets
- Misc
- Gravity → Bouguer Points
- Replicate Text
- Copy Files
- HTML Builder
- Graphics
- Embellish

- 3D Diagram
- Chart
- Map
- Profile or Section
- 2D Tools
- Clip
- Enclosing Polygon
- Reassign Projection
- Montage
- Rescale
- Append 2D Files
- Import
- AGL
- DLG
- DXF
- Shape
- Export
- Raster
- DXF
- WMF
- EMF
- KMZ Export
- Chart / Flat
- Chart / Vertical
- Map
- Section or Profile
- PDF
- Single
- Multiple
- RockPlot3D
- ReportWorks
- Shape
- MapInfo
- 3D Tools
- Tags
- Merge 2 Files
- Merge 2+ Files
- Animate
- XYZ → Contour Map Animation
- XYZ → 3D Surface Animation
- Grids → Contour Map Animation
- Grids → 3D Surface Animation
- Solids → 3D Animation
- Solids → 3D IsoShell Animation
- Solid Reveal
- RockPlot3D File → Animation
- Images → Animation
- Slideshow
- Google Earth Flyovers
- Camera Looking Forward
- Camera Looking At Midpoint
- Spiral From Space
- Flyover - Simple Tour
- Command Driven
- Circular
- Golf Ball Flight Simulation
- Clipboard → Circular Flyover
- Clipboard → Forward Flyover
- Google Earth Drapes Animation
- Google Earth Float Animation
- Google Earth Sea-Level Change
- Images
- Image → Map
- Images → Map
- Drape
- Float
- Single
- Multiple
- Vertical
- Single
- Multiple
- Single Curved
- Update Symbols
- Vertical Images → XYZG
- Image Cube
- Georeference
- Digitize
- Reformat/Enhance
- Google Earth
- Drape - Single Midpoint
- Drape - Two Corner Points
- Drape - Raster Labels
- Float - Single Midpoint
- Float - Two Corner Points
- Vertical - Single Midpoint
- Vertical - Two Pts. Simple
- Vertical - Two Pts. Advanced
- Vertical - 90-Degree Images
- Legend: Add Image As Legend
- Dockable Panels
- Project Manager
- Project Tables
- Types Tables
- Aquifer Types
- Bitmap Types
- Lithology Types
- Stratigraphy Types
- I-Data Types
- I-Text Types
- T-Data Types
- P-Data Types
- P-Text Types
- Well-Construction Types
- Map/Model Tables
- Color Fill Table
- Contour Table
- Point Map Range Table
- 3D Point Map Range Table
- Fault Table
- Polygon Table
- Polygon List Table
- 3D IDW Sector Table
- 2D DW Sector Table
- Log/Section Tables
- XY Coordinate Table
- XY Pair Table
- XYZ Table
- Profile Table
- Bargraph Table
- Index Tables
- Color Index Table
- Line Style Index Table
- Pattern Index Table
- Symbol Index Table
- Synonym Tables
- Synonym Table
- Datasheet Files
- Grid Models
- Solid Models
- 2-D Diagrams
- 3-D Diagrams
- ReportWorks Diagrams
- Google Earth Files
- LAS Files

- RCL Files
- System Tables
- Patterns
- Symbols
- Color Names
- DLOG Attributes
- Land Grid
- Rock Densities
- Well Status
- Borehole Manager
- File
- Import
- ADO (ActiveX Data Object)
- AGS
- CSV/ASCII Text
- Colog → P-Data
- Database Import
- Excel
- Fugro CPT
- Lithology
- P-Data
- Geoprobe DI (Direct Image)
- GDS
- GDS-II
- CSV
- CSV-Texas
- IHS Energy Group
- PI/Dwight - 297 Well Data
- 298 Production Data
- Kansas Geological Survey
- LAS (Log ASCII Standard)
- One File
- Multiple Files
- LogPlot
- SHP (ESRI Shapefile)
- Spectrum SC900 CPT
- Tobin WCS
- Export
- Multiple Tables
- Text
- Excel
- LogPlot
- LeapProg
- Lithology
- Stratigraphy
- I-Data - All
- I-Data - Single
- I-Text
- T-Data - All
- T-Data - Single
- P-Data - All
- P-Data - Single
- P-Text
- Fractures
- Aquifers
- Well Construction
- Colors
- Vectors
- Locations → Datasheet
- Stratigraphy → Datasheet
- Edit
- New Borehole
- Erase Borehole
- Erase All Disabled Boreholes
- Duplicate Borehole
- Cut
- Paste
- Delete
- Enable All Boreholes
- Delete All Boreholes
- Adjust Elevations via Grid Model
- Adjust TDs
- Field Conversions
- Update Symbols
- Save Enabled/Disabled List
- Enable/Disable From List
- Coordinate Converter From XY
- Coordinate Converter To XY
- Calc. XYZ - Current Borehole
- Calc. XYZ - All Boreholes
- Edit Data As Datasheet
- Delete Borehole Data
- View
- Filter Boreholes
- Select Boreholes
- Hide Disabled Boreholes
- Find Borehole
- Locate Closest Borehole
- Borehole Summary
- Database Statistics
- Total Drilled Thickness
- Show XYZ Offset Values
- Change Sort of Boreholes
- Options Fields
- SQLite
- LiteSweep - Compact DB
- Analyze - Update DB Statistics
- Check DB File Integrity
- Borehole Data
- Location
- Orientation
- Lithology
- Stratigraphy
- I-Data
- I-Text
- T-Data
- P-Data
- P-Text
- Colors
- Fractures
- Water Levels
- Symbols
- Patterns
- Bitmaps
- Vectors
- Construction
- Production
- QuickMap
- Datasheet
- File
- New
- Open
- Recent
- Save
- Save As
- Save As Template
- Print
- Import
- ASCII (Text)
- CSV
- Database Import
- DBF (dBase,ArcGIS)
- DXF (AutoCAD) Lines
- DXF (AutoCAD) Lines & Points

- Excel
- Garmin TXT
- Geonics EM38
- Google Earth (Clipboard/KML/KMZ)
- XYZ Coordinates
- Lineation Coordinates
- Single Polyline Coordinates
- Multiple Polyline Coordinates
- Single Polygon Coordinates
- Multiple Polygon Coordinates
- Polygon Corner Coordinates
- GPL
- GPX Track
- GPS Points
- GSM-19
- Laser Atlanta (Survey)
- LAS (Log ASCII Format v1.2-2.0)
- ModPath (Particle Flowpaths)
- NEIC (USGS Seismic)
- SEG-P1 (Shotpoint Locations)
- SHP (ESRI Shapefile)
- WCS (Tobin Well Locations)
- Create File List
- Export
- ASCII (Text)
- DBF (dBase,ArcGIS)
- XLS (Excel)
- Transfer
- Locations → Borehole Manager
- Stratigraphy → Borehole Manager
- Edit
- Cut
- Copy
- Paste
- Delete
- Cut All
- Copy All
- Copy Titles
- Paste Titles
- Select All
- Enable Selected
- Disable All
- Disable Selected
- Search
- Find
- Find Next
- Find & Replace
- Find Closest Point
- View
- Column Properties
- Block Statistics
- Filter
- Lo/Hi
- Multi-Column
- Borehole Distance
- Project Area
- Polygon
- Remove Disabled
- Columns
- Optimize
- Insert
- Delete
- Math
- Absolute
- Function
- Column & Column
- Column & Constant
- Merge
- Increment
- Fix
- Column Statistics
- Data Fill
- Convert
- Decimal → RGB
- RGB → Decimal Colors
- Numbers/Range → Colors
- Translate
- Rows
- Insert Row(s)
- Delete Row(s)
- GoTo
- First
- Last
- Specific
- Sort
- Sort by Enabled Rows
- Fault Manager
- Options
- 2D Map
- 3D Diagram
- Import Dips
- Import Grid
- Import Line 2D
- Import Line 3D
- Import Polyline 2D
- Import Polyline 3D
- Import Contours
- Import Triangles
- Import XYZ
- Export to Triangles
- Playlist
- Add
- Project Commands
- Backup the Database
- Set Project Dimensions
- Load Project Dimensions
- Project Units
- Set Project Folder
- Reset Project Settings
- Select a Subsite
- Enable from a List
- SQL Statement
- Datasheet Commands
- New Datasheet
- Save Datasheet
- Load Datasheet
- Enable All Datasheet Rows
- Disable All Datasheet Rows
- Playlist Commands
- Comment
- Notes
- Copy File
- Launch Program
- Pause
- Stop Processing Playlist
- Terminate RockWorks
- Sound Completion Notification

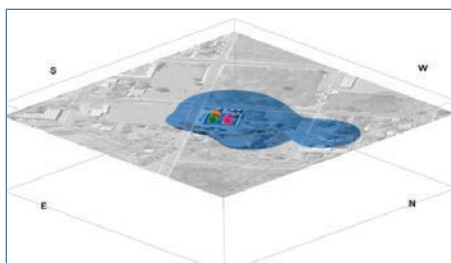


Borehole logs, cross sections, concentration maps, plume models, geology models, time-based animations, geochemistry diagrams and more. RockWorks will help the environmental professional along the path from site characterization to remediation planning and execution.



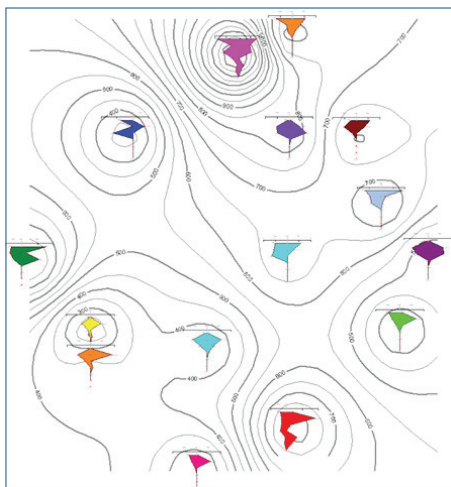
Mapping Tools

- Borehole location maps with detailed data labels
- Contaminant concentration maps with lines and color fills, custom color tables, date filters
- Plan- and surface-based slices from 3D models
- Stiff diagram maps
- Time-graph maps for user-selected analytes
- Potentiometric surface maps
- Flow maps in 2D and 3D
- Coordinate systems/conversions: lon/lat, UTM, State Plane, local, custom



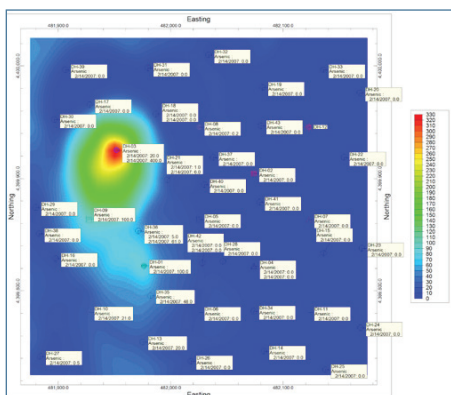
Borehole Database Tools

- Cross sections: multi-panel projected and hole to hole, with borehole logs and/or interpolated panels
- Correlations: model-based and "EZ" panels, snapping tools for hand-drawn correlations
- Borehole logs in 2D and 3D
- 3D fence diagrams
- Surface modeling of stratigraphic layers and water levels
- Plume modeling of analytical data, with display as voxel or isosurface diagrams, 2D plan and section slices
- Solid modeling of lithologic materials, geophysical and geotechnical measurements
- Volume reports of lithologic and stratigraphic models, contaminant extraction models
- Bulk data imports from Excel, text, LAS, other databases

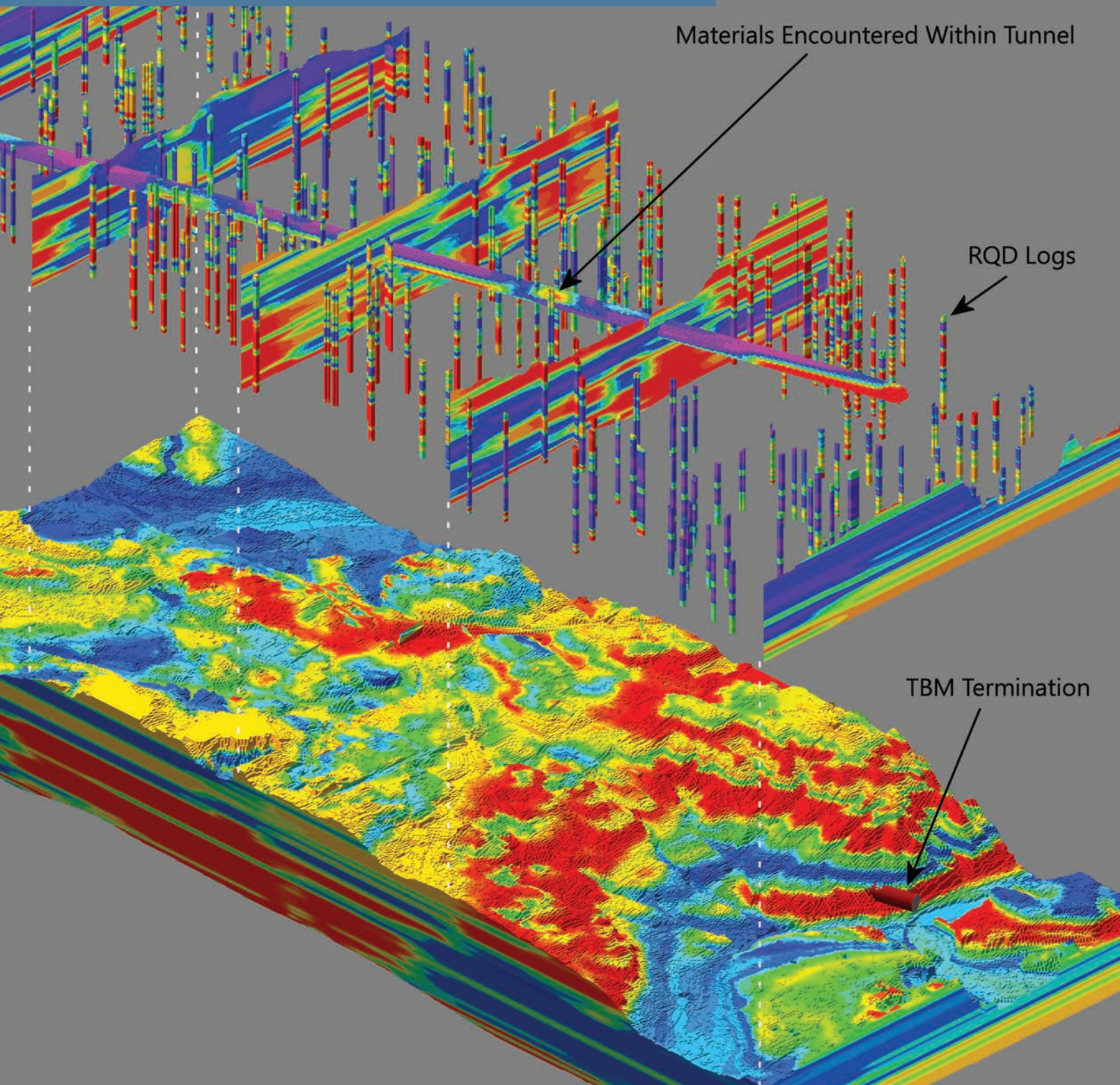


Other Tools

- Time-based animations
- Piper and Durov diagrams with TDS circles, Stiff diagrams for multiple samples
- Water level drawdown diagrams and surfaces
- 2D editing tools: contour lines, text, shapes, legends, images
- Composite scenes in 3D with maps, logs, surfaces, solids, panels, surface objects
- Page layout program for small to large format presentations and posters
- Exports to GIS Shapefiles, CAD DXF, raster formats, Google Earth
- Image import and rectification
- Program automation
- Google Earth output directly from data: points, cones, lines, polygons, images, flyovers



RockWorks® – Geotechnical



RockWorks offers geotechnical and civil engineers graphical and analytical tools for evaluating construction and excavation sites. Create borehole logs and cross sections, dozens of different types of maps, structural diagrams, geological/geotechnical/fracture/color models, volume reports and more.

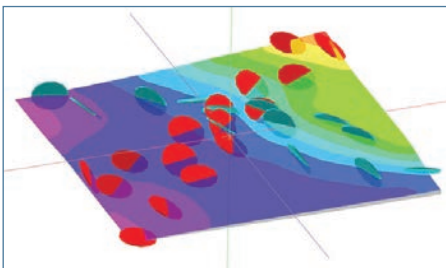
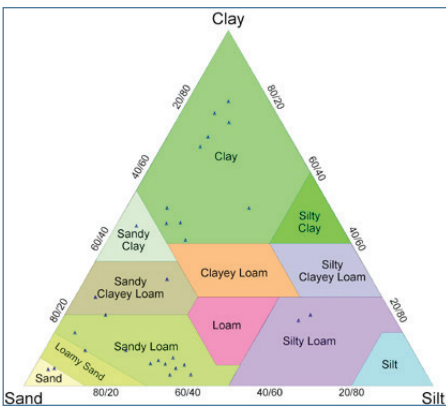


Mapping Tools

- Multiple components in piechart, spider maps
- Point maps with detailed data labels
- Topographic contour maps with lines and color fills, custom color tables
- 3D surface displays
- Strike and dip maps in 2D and 3D
- Coordinate systems/conversions: lon/lat, UTM, State Plane, local, custom

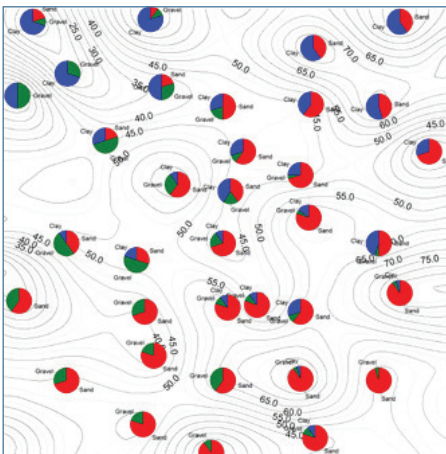
Borehole Database Tools

- Cross sections: multi-panel projected and hole to hole, with borehole logs and/or interpolated panels
- Correlations: model-based and "EZ" panels, snapping tools for hand-drawn correlations
- Borehole logs in 2D and 3D
- 3D fence diagrams
- Surface modeling of stratigraphic layers and water levels
- Solid modeling of lithologic materials, fractures, and geophysical, geotechnical, geochemical data, with display as voxel or isosurface diagrams, 2D plan and section slices
- Geology maps: plan slices from stratigraphy or lithology models
- Volume reports of lithologic, stratigraphic, excavation models
- Fracture display and modeling, stereonet maps, rose diagram maps
- Munsell colors for display in logs and interpolation into color models
- Data imports: Excel, AGS, Colog, Fugro CPT, gINT, LAS, Penetrometer, other databases

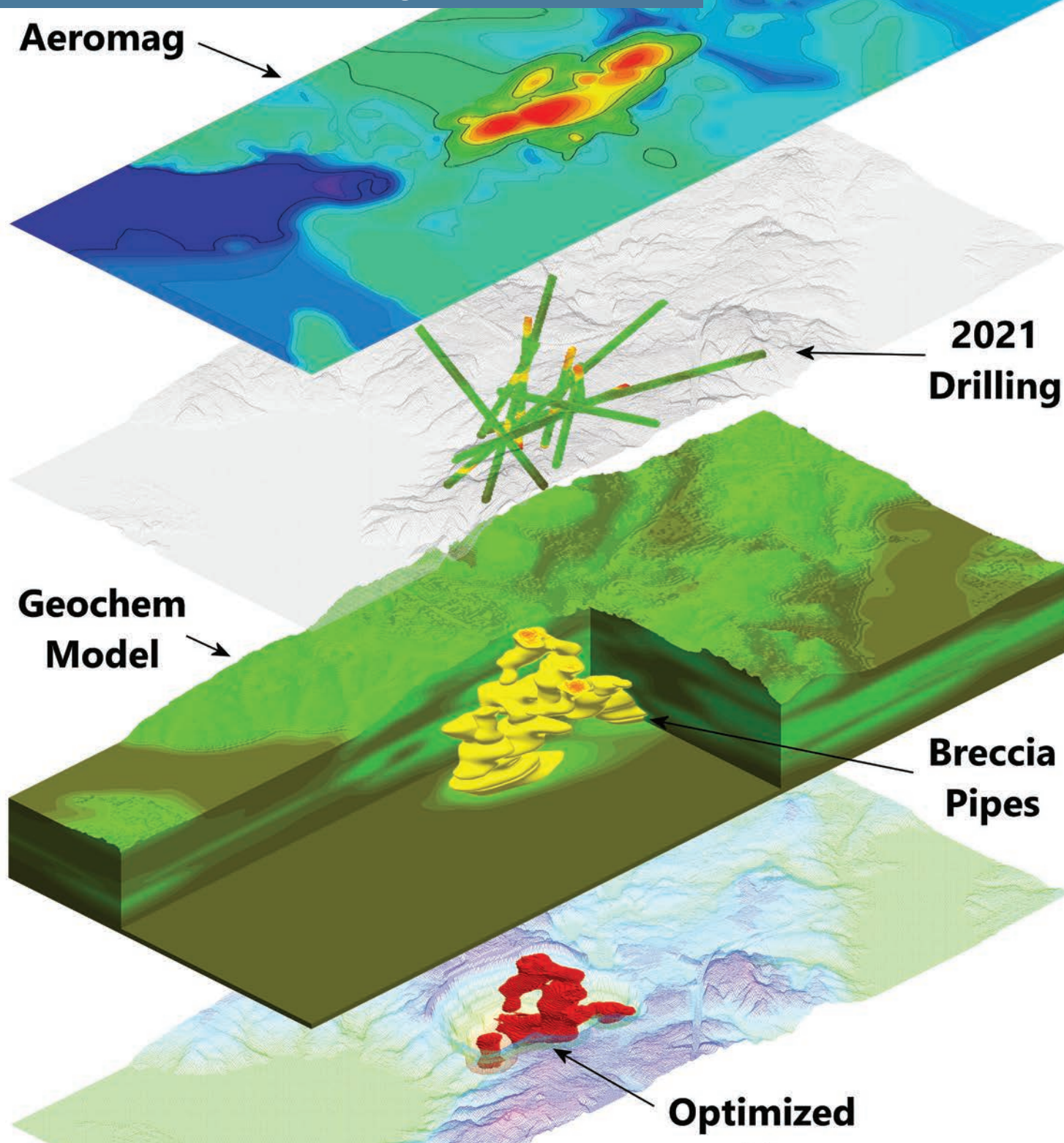


Other Tools

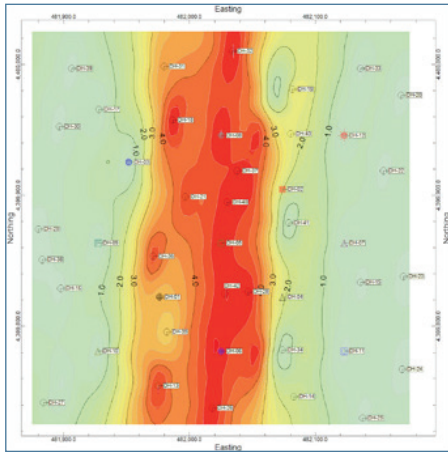
- Sieve diagrams, ternary diagrams with classification overlays
- Stereonet and rose diagrams
- Slope/aspect analysis on grid models
- Predictive tools: lithology materials from curves, interval data (porosities, strength, cohesion) from lithology
- 2D editing tools: contour lines, text, shapes, legends, images
- Composite scenes in 3D with maps, logs, surfaces, solids, panels, surface objects
- Page layout program for small to large format presentations and posters
- Exports to GIS Shapefiles, CAD DXF, raster formats, Google Earth
- Image import and rectification
- Program automation
- Google Earth output directly from data: points, cones, lines, polygons, images, flyovers



RockWorks® – Mining

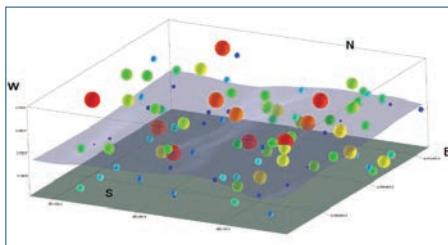


Mining professionals rely on RockWorks point and contour maps, 2D and 3D log displays, projected sections, block model interpolating and editing, detailed volume calculations, and import/export tools in both exploration and production phases of their projects.



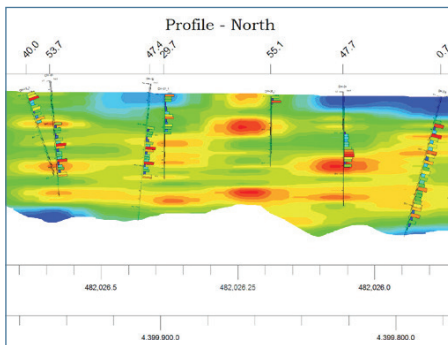
Mapping Tools

- Drillhole location maps with detailed data labels
- Assay, concentration maps with lines and color fills, custom color tables
- 3D surface displays: topographic surfaces, stratigraphic units
- 3D point maps
- Geology maps: plan or surface-based slices from block models
- Multivariate maps: pie chart, bar chart, starburst, spider maps
- Coordinate systems/conversions: lon/lat, UTM, State Plane, local, custom



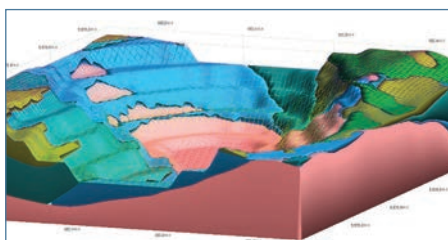
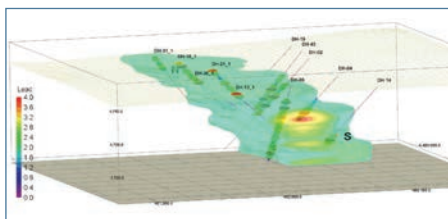
Borehole Database Tools

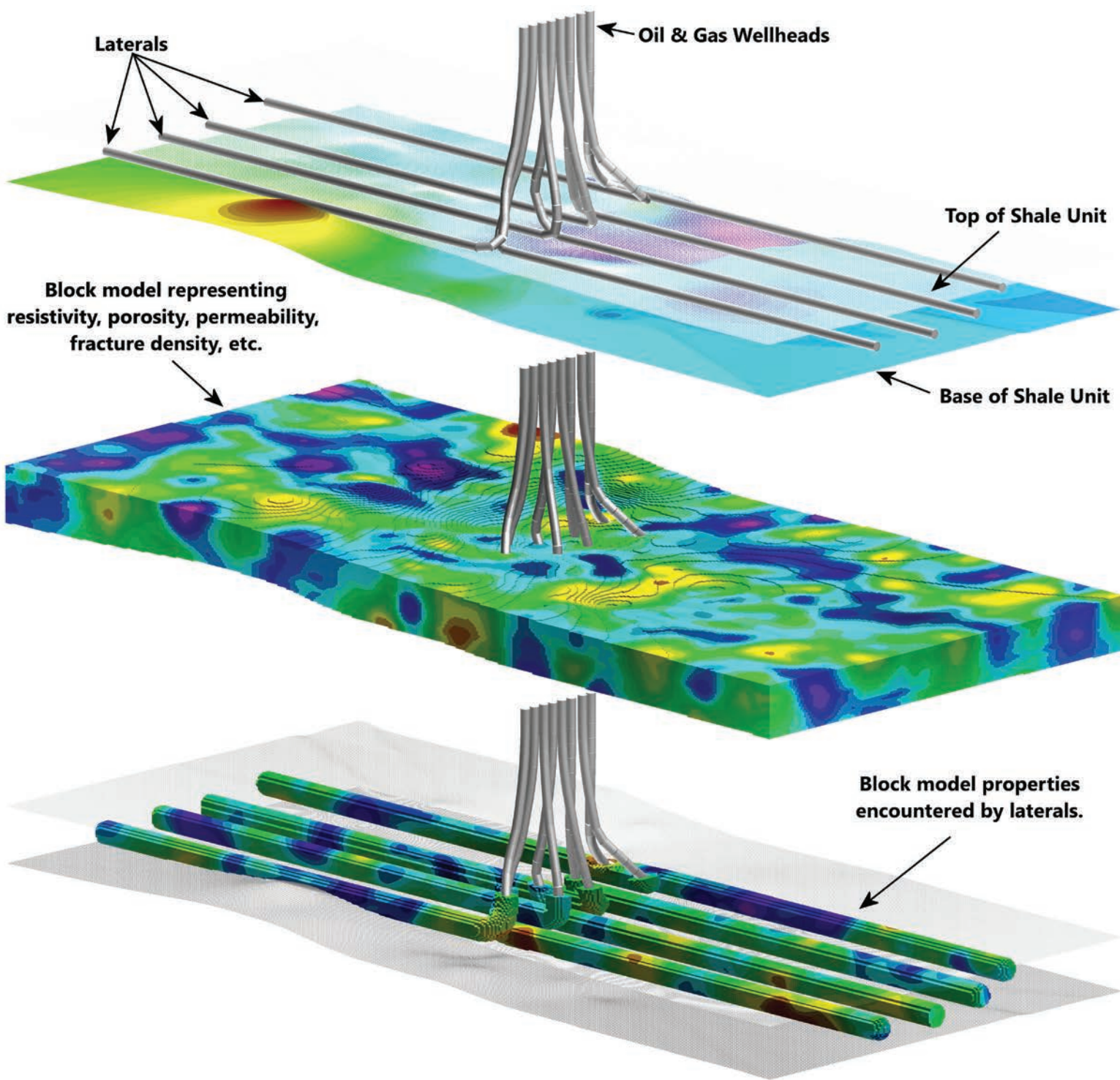
- Projected cross sections showing drillhole orientation
- Correlation panels: stratigraphy, lithology, grade/concentration, geophysics
- Drillhole logs in 2D and 3D with lithology, stratigraphy, bargraphs/disks, curves, color intervals, text
- Block model interpolation from XYZG point or drillhole data, display as voxels, isosurfaces, fence diagrams, 2D plan and section slices
- Surface model interpolation of stratigraphic units
- Downhole fracture display and modeling—closest fracture and closest fracture intersection
- Volume reports of lithologic, stratigraphic models
- Data imports: Excel, LAS, acQuire, Newmont, other databases



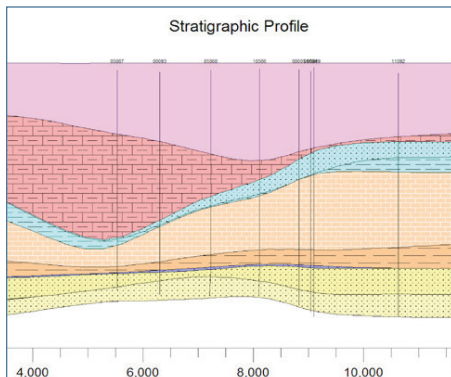
Other Tools

- Block model editor: 3D voxel/polyhedron editor or slice-based
- Volume calculations: grade statistics by level, extraction reports, GT calculators, floating cones model extraction tools
- Fracture display and modeling, stereonet and rose diagrams
- Ternary diagrams, frequency histograms for source data and models
- Graphic output: 2D and 3D output to RockWorks, Google Earth
- 2D editing tools: contour lines, text, shapes, legends, images
- Composite scenes in 3D with maps, drillhole logs, surfaces, blocks, panels
- Page layout program for small to large format presentations and posters
- Exports to GIS Shapefiles, CAD DXF, raster formats, Google Earth
- Image import and rectification
- Program automation



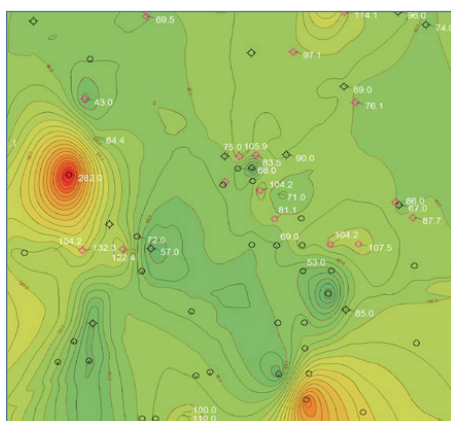


RockWorks gives the petroleum geologist the tools to get the job done: well spotting, mapping (bubble, structure, isopach, land grid, log maps), cross sections, stratigraphic modeling, reservoir modeling and much more.



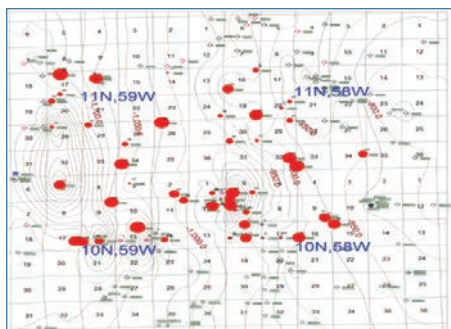
Mapping Tools

- Structure and isopach maps: contour maps with lines and color fills, custom color tables
- 3D surface displays
- Bubble maps of any well data (production, etc.)
- Well and lease spotting from Range, Township, Section descriptions
- Land grid and lease maps with section boundaries
- Coordinate systems/conversions: lon/lat, UTM, State Plane, local, custom
- Well location maps: customized symbols (e.g. well status), plan-view horizontal well traces
- Gridding algorithms: kriging, triangulation, inverse-distance, trend polynomial
- Grid model tools: filters, math operations, editor, imports and exports



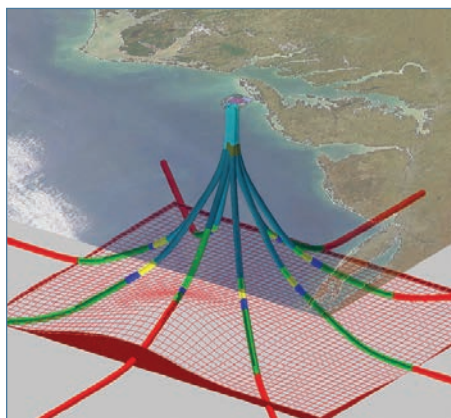
Well Database Tools

- Cross sections: hole to hole and projected
- 3D fence diagrams
- Correlations: model-based and "EZ" panels
- Horizontal and vertical wells: 2D and 3D, flexible log layout
- Stratigraphic modeling of all/selected formations
- Solid modeling of lithologic, geophysical, geotechnical, geochemical data, with display as voxel or isosurface diagrams
- Geosteering: optimal well paths based on target formations, lateral and 3D displays
- Well database for well locations and miscellaneous well data, formation contacts, raster images, geophysical data, lithology, well construction and production
- Data imports—Excel, LAS, LogPlot, IHS, KGS, Tobin, other databases
- Stratigraphic contacts from digital elog data or raster logs



Other Tools

- Structural geology diagrams
- Graphic output: 2D and 3D output to RockWorks, Google Earth
- 2D editing tools: contour lines, text, shapes, legends, images
- Snapping tools for hand-drawn correlations
- Composite scenes in 3D with maps, logs, surfaces, solids, panels, surface objects
- Page layout program for small to large format presentations and posters
- Exports to GIS Shapefiles, CAD DXF, raster formats, Google Earth
- Image import, rectification, depth-registration
- Program automation using the Playlist feature



RockWorks® Feature Levels

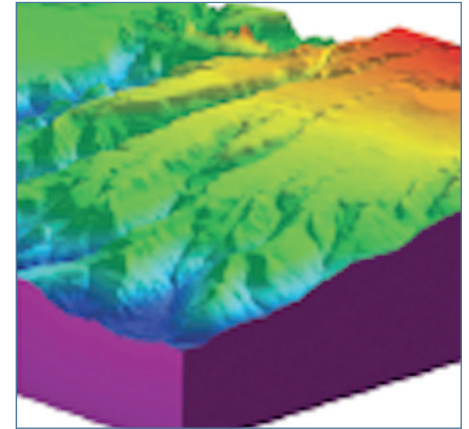


RockWorks is offered with four different feature levels: Toolbox, Basic, Standard and Advanced.

All four levels include the RockWorks Datasheet and the ModOps, Utilities and Graphics menus. These menus offer numerous programs for mapping XYZ data, modeling XYZG points, creating stereonet and rose diagrams, creating Piper, Stiff and Durov plots and much more.

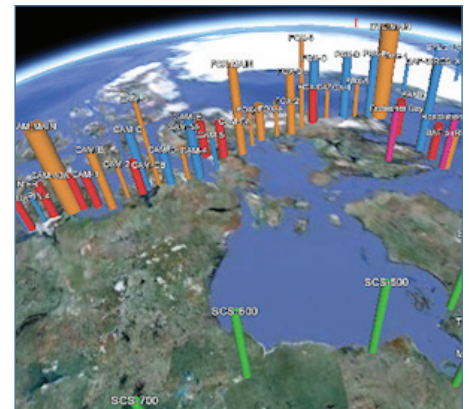
All feature levels also include the three Graphic Output programs: RockPlot2D, RockPlot3D and ReportWorks.

Basic, Standard and Advanced also include the Borehole Manager and its local database for storing and managing borehole-based data.



RockWorks Toolbox

The RockWorks Toolbox is a collection of hundreds of programs to assist with geological data analyses and visualization. The Toolbox is a limited version of RockWorks that does not include fault modeling, borehole-related tools or the Playlist.

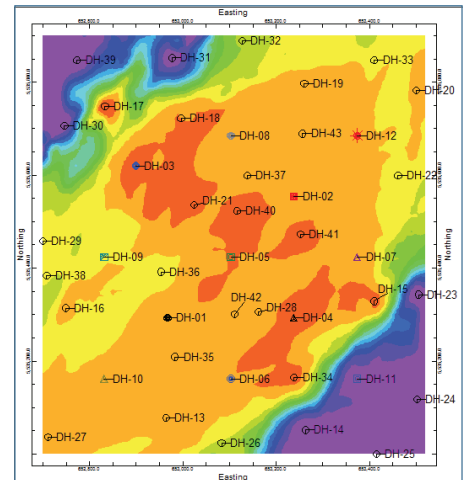


RockWorks Basic

With Basic, the borehole processing tools are limited to observed data—no modeling: Borehole location maps, 2D and 3D strip logs and striplog profiles and cross sections. Simple correlation panels are offered for Stratigraphy, I-Data and P-Data in 2D section diagrams. 5 items per playlist and 3 faults.

RockWorks Standard

All Basic level tools, plus Borehole Manager modeling: lithology, stratigraphy, geophysical/geochemical/geotechnical, aquifers, colors, fractures. 5 items per playlist, 3 faults.

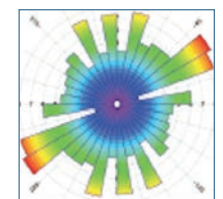
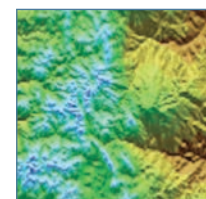
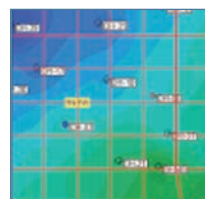
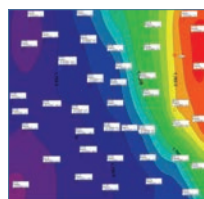
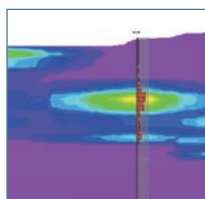
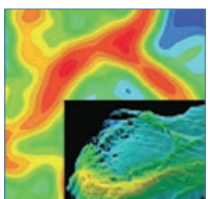


RockWorks Advanced

All Standard level tools, plus SQL-server database support, program automation (scripting), Borehole Manager petroleum production diagrams. Unlimited items per playlist, unlimited faults.

Academic

Ask us about our free college curriculum datasets, exercises, and significant academic discounts (see web site). These "canned" classes represent extended versions of the RockWorks training exercises tailored for educators. A great teaching resource.



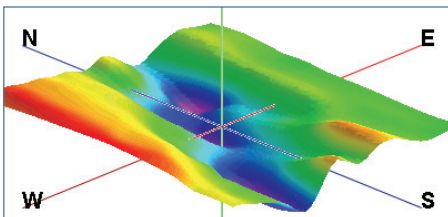
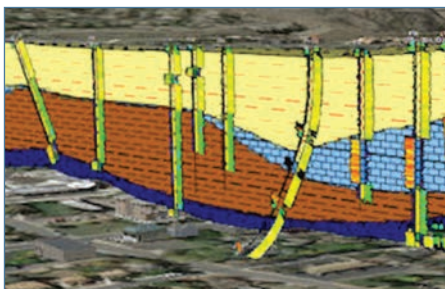


RockWorks Feature Levels

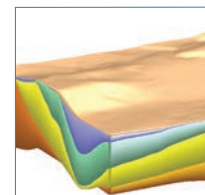
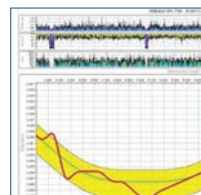
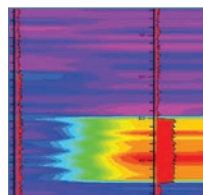
Download free trial at rockware.com

License Level	Toolbox	Basic	Standard	Advanced
Single License price	—	\$1,650	\$3,300	\$5,500
-or- Network License price starting at	—	\$2,890	\$5,775	\$9,625
-or- Annual Rental price	\$399	\$710	\$1,420	\$2,365
ModOps, Utilities and Graphics menus	✓	✓	✓	✓
Logs and Sections	—	✓	✓	✓
Borehole-Based Modeling	—	—	✓	✓
SQL Server; Command Script Automation	—	—	—	✓
Playlist Automation	—	5 items	5 items	unlimited
3D Faults	—	3 faults	3 faults	unlimited

See <https://www.rockware.com/product/rockworks/> for Academic Pricing

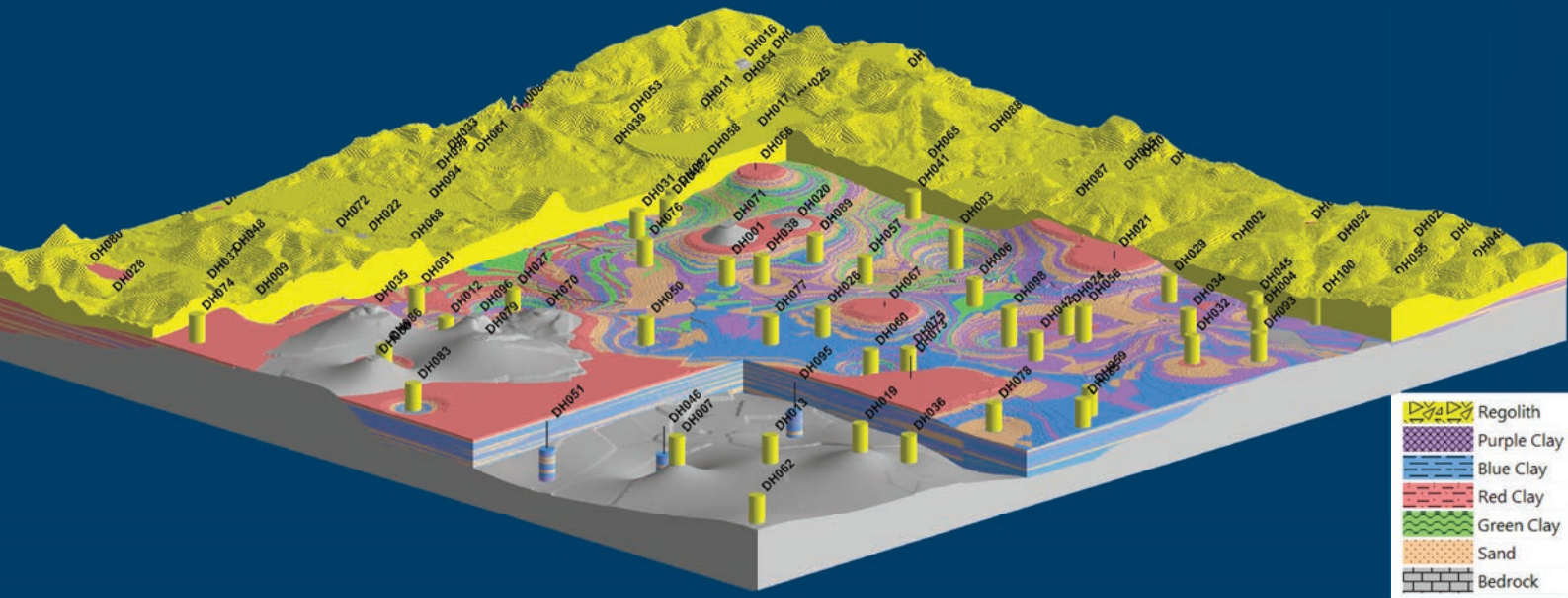


G-Value	Keyword	Pattern	Fill Percent	Density	Show it
2.0	Clay	[Pattern]	100	2.2	
5.0	Gravel	[Pattern]	100	2.8	
9.0	Ignimbrite	[Pattern]	100	2.5	
6.0	Mudstone	[Pattern]	100	2.6	
8.0	Rhyolite	[Pattern]	100	2.1	
4.0	Sand	[Pattern]	100	2.7	





2221 East Street
Golden CO 80401
303.278.3534
800.775.6745
rockware.com



RockWare Training

Too busy to teach yourself? Get up to speed fast with RockWorks training courses.

- Focus on the software for two days—WITHOUT office interruptions.
- RockWare trainers are both software and industry experts.
- Courses cater to all levels and backgrounds.

Workshops

Workshops are periodically held in Golden Colorado. See RockWare.com for a workshop schedule.

Custom Training

Custom courses can be held onsite in your office, or via the web in an online meeting. Courses can follow a standard curriculum or can be tailored to address client-specific problems and needs.

Email training@rockware.com or visit rockware.com for pricing and additional information.