

Geolog 21

Expanded Capabilities in the Industry's Leading Petrophysical Analysis Solution

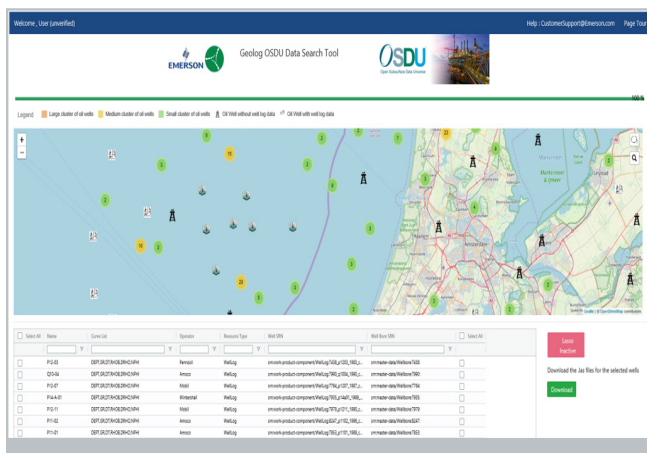
Geolog™ 21 is the newest version of Emerson E&P Software's industry-leading solution for formation evaluation and petrophysical analysis. This release has been designed with user convenience in mind – from enhanced automation and new petrophysical functionalities, to increased openness through expanded connectivity to the Open Group Open Subsurface Data Universe™ (OSDU™).

Geolog 21 also includes new and enhanced functionality to technologies that support additional markets, such as carbon capture and storage (CCS), geothermal energy, radioactive waste disposal and mining.

Reduced time to results through automation and connectivity

Geolog 21 continues to enrich the user experience and reduce time to results through the ongoing automation of manual tasks. This release offers a new Automated Parameter Picking module in Determin to enable Quick Look multi-well petrophysical analysis. Parameters are automatically stored in the well for immediate use in any deterministic interpretation module.

Additionally, a new well inventory view enables the rapid analysis, filtering and selection of relevant well data at the project scale. This enables the collection and exposure of more Geolog data for analytics.



▲ Geolog 21 expands connectivity to the Open Group's industry-wide OSDU (Open Subsurface Data Universe) initiative.

Enriched petrophysical functionalities to meet today's challenges

Petrophysical analysis is at the heart of Geolog, and Geolog 21 delivers new functionality across all areas of this discipline.

New tools for the Determin and Multimin modules, such as the ones listed below, reflect Emerson's continuous dedication to expanding and enhancing functionality for use in the widest range of depositional environments.

- Additional neutron tools, as well as three more user-defined minerals, have been added to Multimin
- XRF data can be used as input equations in a Multimin model
- Neutron porosity equations rather than chart lookup can be used to compute apparent or effective porosity computation in Determin
- Determin hydrocarbon corrected porosity has the option to use either Bateman-Konen porosity or a specific neutron tool porosity equation
- Shale volume exponents for the Indonesia saturation model can be user-defined

Streamlined processing and interpretation of NMR data

New workflows have been added to accelerate the in-house processing and interpretation of NMR data from LWD tools (in addition to previously available wireline NMR tool support).

Ensuring consistent petrophysics and rock physics interpretation workflows

A variety of updates have been made to enable rock physics modeling and elastic property management in carbonates. When applicable, individual modules have been combined, for a smoother workflow. Elastic properties can now be modeled for all minerals available in Multimin.

Expanded production logging to support array spinner tools

In Geolog 21, it is possible to process and interpret array production logs, enabling the interpretation of multi-phase flow regimes in high angle and horizontal wells.

Geolog 21

Expanded support for new energy workflows

Geolog tools have been successfully used in different industries over the years. With the release of Geolog 21, new functionalities have been added and existing ones enhanced, to support their use in such markets as carbon capture and storage (CCS), geothermal energy, radioactive waste disposal, and mining.

Chief among these is the expansion of Geolog's geochemistry functions with the addition of a water analysis workflow. This workflow offers a variety of modules and plots to help assess sub-surface water reservoir properties such as:

- Type and origin of the water
- Water interaction with host rock and other injected fluids
- Physical, electrical and thermodynamic properties
- Behavior during production (scaling, corrosion)
- Suitability for human use (drinking, irrigation)

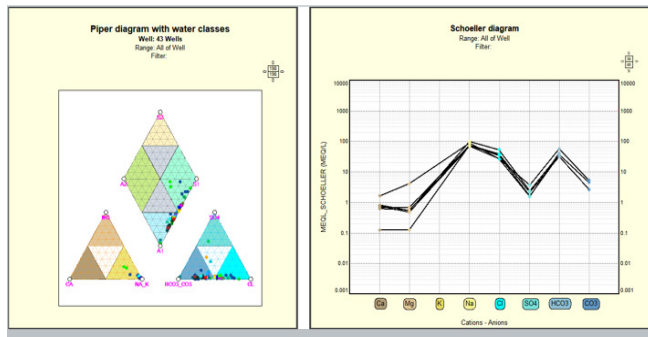
The ability to assess and report sub-surface water reservoir properties and quality in different prospects is essential in many industries, including traditional oil & gas basins, geothermal and water resource prospects.

In addition, Geolog 21 allows the display of well schematics on a well progress plot, and the evolution of completions over time. This is useful in multiple domains, including geothermal energy and carbon capture and storage (CCS).

Increased openness and connectivity

Emerson is fully committed to supporting the Open Group's industry-wide OSDU (Open Subsurface Data Universe) initiative. Geolog 21 has expanded this support to OSDU R3 read-write connectivity: It is now possible to load OSDU R3 Well Log data in a Geolog project using the OSDU importer module in the Project application. New log data and associated PDF files can be sent from Geolog back to the OSDU R3 instance.

Geolog 21 continues to update its capabilities for data exchange with other platforms, and offers connectivity to the latest versions of Schlumberger's Petrel software, including Petrel 2021.



- ▲ Analysis of sub-surface water reservoir properties and quality.

Interoperability

All Epos™-based applications enable interoperability with third-party data stores, including:

- OpenWorks® R5000.10
- Petrel* 2021, 2020, 2019
- Recall™ 5.4.2
- Matlab™
- Python™

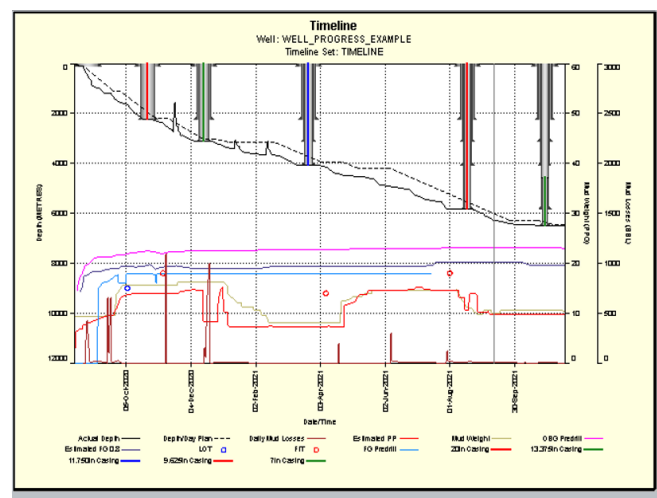
* a mark of Schlumberger

System Specifications

- 64-bit Red Hat® Enterprise Linux® 7.1 and above
- Microsoft® Windows® 10

The Emerson E&P Software Advantage

- Vendor independence gives users the freedom to choose the best tools for each task, with no conflict of interest.
- Fully scalable and customizable, Geolog meets the needs of users, from generalist geologists, to expert petrophysicists, to engineers working in field development.
- An intuitive, interactive, Windows-style interface optimizes usability and ensures a short learning curve.
- Integration with other Emerson E&P Software products provides access to a full range of industry-leading solutions.



- ▲ Well progress plot and the evolution of completions over time.



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