

RESULTS

# Post-Processor: Visualization & Analysis

## Benefits

- Make fast and informed decisions about improving recovery and performance for a well or a field
- Real-time updating of results as simulation progresses
- Complete integration of production and property profile plotting within one tool
- Output to 3D geological software to complete the seismic-to-simulation-and-back workflow

## New Features

- Generate histograms to view property distribution in reservoir models
- Visualize flow vectors to further analyze fluid flow
- Create Ad Hoc groups for wells and layers for more in-depth results analysis

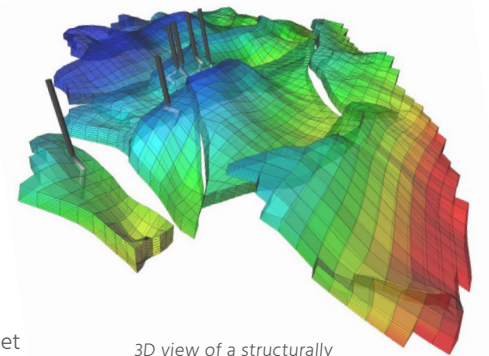
Results helps increase understanding and insight into reservoir characteristics, recovery processes and reservoir performance with state-of-the-art visualization and analysis capabilities.

Results™ enables users to quickly compare simulation outputs with field history data, analyze multiple views and personalize the interface to show plots of interest. Results is easier to use, more intuitive and gives users greater power in analyzing data and communicating business decisions. Results helps users improve productivity and efficiency throughout day-to-day simulation work.

## Performance

Reservoir simulation output files can grow larger due to model size and to complexity of the recovery process, which may increase loading time and memory requirements. To improve simulation post-processing activities, Results uses the “SR3” output format, which is a compressed and smaller file size, from all simulators – IMEX™, GEM™ and STARS™.

- Load large-model, memory-intensive results files very quickly
- Reduce memory usage, as files are 30% to 50% smaller than previous defaults
- SR3 format enables faster reading of data and loading 3D grids
- Perform common tasks such as creating plots and interacting with 3D models faster
- Fast, automatic re-reading and updating plots from the latest simulation results
- Automatically convert IRF and MRF files to the more efficient SR3 file format
- Visualize simulation results from CMG Cloud (Public & Private) to meet on-demand needs, improve project delivery, and improve hardware efficiency



3D view of a structurally complex reservoir

## Usability

The Results interface enhances the user experience, makes features more easily accessible and give users more flexibility when creating plots, grouping data, and analysing results.

- All 2D and 3D functionality is intuitively organized and easily accessible using the ribbon, at the top of the Results screen
- Quickly find specific well or reservoir parameter data using the search boxes located in all sections requiring data selection from a list
- Save commonly created plots and dashboards as templates to eliminate generating the same plot or dashboard each time a Results file is opened
- Repeat plots are automatically created for all user-created plots, as long as the property is repeatable
- Optimized workflow for creating plots and 3D views
- Use Python to create formula-based time-series data based on any available data

## Visualization & Analysis

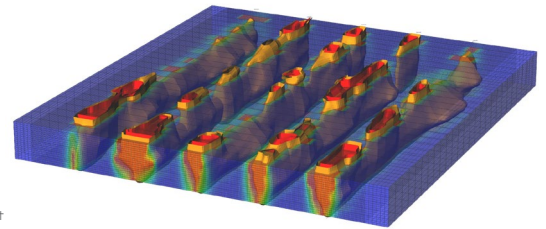
Combining the power of 2D and 3D visualization into one tool allows faster and more efficient results analysis. The enhanced visualization capabilities increase the depth of analysis, as users can compare plots and discern subtle differences that may not be detected when switching between multiple post-processing applications.

- Compare data and identify patterns, trends and relationships with the interactive dashboard
- Seamlessly analyze results by combining plots and 3D views from multiple .SR3 files on the same screen
- Quickly animate 3D plots and time series plots in the dashboard
- Fast and efficient analysis of any specified time-step with the “Jump to Time-Step” option
- Effectively visualize data across multiple monitors
- Streamline access to functionality with the context menus
- Efficiently load and plot well logs along a trajectory or well path (single or multiple well format, .LAS format)
- Plot property versus distance plots for analysis of trends along a certain linear path in the reservoir or along the well
- 2D cross sections and plot types are important simulation analysis tools
  - Time-series vs. time series plots explore relationships between one time-series property and another
  - Block properties allow spatial property for selected grid blocks to be plotted vs. time
  - Average sector property vs. depth plots now available
  - Combine several plots and views (areal, IK and JK) on the dashboard

## Reporting

Use Results during field development planning to effectively estimate performance, recovery factor and Net Present Value (NPV). The enhanced reporting functionality enables users to easily communicate simulation results in both 2D and 3D formats for increased understanding.

- Improved export of well summary and plots directly into MS Excel<sup>®</sup>
- Quickly share simulation data by exporting pre-formatted MS Excel tables
- Create presentations quickly by saving images and printing plots directly from Results
- Plot property information is added to the template files
- Display the latest data from a simulation run before it's completed for up-to-date reporting of results



Multiple well pair SAGD model showing steam chamber conformance via temperature isosurfaces.



### Contact

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