

Interactive Petrophysics 3.4

WHAT'S NEW? Interactive Petrophysics™ (IP) interpretation software provides you with a full range of tools for all your petrophysical interpretation needs.

The following briefly describes the new modules and the enhancements to existing modules that have been made to Interactive Petrophysics (IP), for those installing/upgrading to IP version 3.4.

BOLD ITEMS indicate new features of Interactive Petrophysics version 3.4.

For more information contact your local SIS office or email: sisinfo@slb.com.

www.slb.com/sis

DISPLAY:

User Interface

- Windows XP™ style graphics.
- Improved toolbar icons.
- Consistently named screen buttons.

IP Start-Up

- Improved procedures for closing down and opening up IP.

Multiple Workareas

- Expand the size of the IP desktop by using multiple workareas.

Help Documentation

- Updated to include all the new modules.
- Improved indexing of keywords enabling the user to quickly search the Help Document.

Custom Toolbars and Menus

- The User can now create three custom menus plus three user defined toolbars.
- User Programs
- New User Programs can now appear as icons within the User programs menu.
- User Program icon is user editable.
- User Programs can now be added to User Defined Toolbars and Menus.



TOOLS:

Database Security

- Enables the user to stop unauthorized users from viewing and modifying IP database wells. Access rights can be set by project or by individual wells.

Editable Well Folder Structure

- User defined Well Folder structure.

LOADING:

Shell LOGIC Database Loader

- Enables the migration of Shell LOGIC database projects into IP projects.

Well Loading

- Select and load Wells using API, UWI or Well names.
- Loading multiple embedded LAS 2 files can be handled more efficiently as all the LAS sequences are now shown on the input screen.

Batch LAS Loader

- Can display API or UWI names in the grid list of files to load.
- Use API or UWI names to select correct well to load data into.

LAS3 loading

- Improved functionality.

Curve Sets

- Curve Sets are now fully customizable. Data loading to Set of correct step. If a user has 6", 1" and 0.1" step data then this can be loaded into a 6", 1" and 0.1" Set respectively.
- Irregular step Sets can now be created. This allows direct input of core data into IP.
- Irregular Set depth tolerance
- Curves can be moved or copied between Sets with different steps.
- All output curves within a module must belong to the same Set or Set type.
- Depth curve created for each Set.
- Short Set names maximum length increased to 8 characters.
- Curve names maximum length increased to 14 characters.
- A Set dictionary which is user defined and transferable between IP projects.

Multi-Well Curve and Set Listings

- Create Well listings which improves the functionality of the module as a database search tool.
- Output listings to printer, file or clipboard.

WELL HEADER:

History Module

- Records all significant operations within IP including which modules have been run, the curves generated. Module Parameter listings are stored and there is a utility program which can compare the listings and highlight the differences between the listings.

Database Browser

- Display Wells with API number or UWI.
- Filter displayed Wells.
- User defined Well folder structure.
- Drag and drop curves between Sets (copy or move).
- Delete curves in Sets.
- Rename curves in Sets.
- User selectable fonts for Browser display.
- Preview available curves both in a data listing and graphical display.
- Manage Well Header Info.
- API, UWI, comment or none can be added to the Well name, which will then be displayed at the top of every module.

Manage Multi-Well Header Info.

- Significant expansion of the Well Attributes that can be displayed.
- Display Well Locations as UTM's or Lat/Long coordinates.
- Output Well information to a text file or to clipboard.

ZONE SETS:

Linking Zones / Tops

- Parameter Sets Link module for the control of linking Parameter Sets.

Creating TVDss Sets

- Define format for Tops and or Fluid contacts in TVDSS depth rather than measured depths.

Editing Zone / Tops Sets

- Can now link Sets so that any operation performed in a Set is done on all the linked Sets.
- Create a Tops Set from Parameter Set zones.
- Output Top zones directly to Excel™.

PLOTS:

Custom Well Log Headers

- Total user control over Log Plot Header format.
- Montage builder used to create user defined header formats.
- The well and log attributes are automatically linked into the log header.

Default Plot Format

- Enables the user to define the default log plot. When a new plot is requested for a well the default log plot format will be used. This will enable a user to scroll through an IP database of wells and have all the wells display the same log plot format.

Crossplot

- Standalone Pickett Plot.
- Multiple sets of discriminators can be setup and used.
- Dockable zone list.
- Advanced features for Regression Analysis including multiple regression lines from different areas.
- Improved 'Create User Line' module.
- Improved Pressure Gradient Plot with greater user interaction for creating and modifying pressure gradient lines.

Histogram

- Dockable zone list.

DEPTH SHIFT:

Depth Shift Other Curves

- Allows the shifting of curves using the depth shift offset curve generated by The Interactive Depth Shift module.

Depth Shift Wizard

- Guides the user in filling out the depth shift form (Log Plot Format) launched from Interactive Depth Shift module.

Auto Depth Shift

- Option to preserve original shifts and only add new shifts a set distance away from the original shifts.
- Now has an option to specify the correlation type between the reference and correlation curve.

Log Environmental Corrections

- Now include Weatherford Compact Tool Series.

CLAY/POROSITY-SW MODULE:

Fading Parameter Screens

- Parameter screens fade allowing screens behind them to be viewed at the same time. Option can be toggled on/off.

Clay Volume module

- Linking module to Porosity / Water Saturation module.

Porosity / Water Saturation Module

- Clay Type Distribution functionality using Thomas-Stieber shale distribution calculations.
- Increased Porosity output curves so that comparisons can be made between the different porosity methods for quality control purposes and not for final results.
- Increased Water Saturation output curves so that comparisons can be made between the different water saturation methods.
- Increased flexibility in Interactive Phi/Sw plot setup.
- New logic for killing the analysis over certain intervals. Used for special minerals not covered by Coal, Salt, and Bad hole logic.
- Linking of module to Clay Volume module so that when changing clay parameters in one module the clay parameters are updated in the other module. This also applies to clay parameters picked using interactive crossplots.

DIP PICKING:

Interactive Dip Picking

- Pick dips off an image log and classify dips according to User definitions.
- User can manually enter dip values, if required.

FORMULAS:

Formula

- A Random function has been added to User Formula and Multi-Line Formula.

Basic Log Functions

- Convert density porosity to bulk density.
- Calculate permeability using standard industry equations.
- Resistivity Temperature Conversion.
- Calculate a downhole pressure from an input fluid density.
- Calculate a downhole water density.
- Mud Resistivity Approximations.
- Calculate downhole oil and gas densities from surface densities.
- Sigma oil, water, and gas conversions.

MULTI-WELL:

Multi-Well Batch Operations

- Module now works with wells not loaded in memory.
- Can select None, Well Comment, API number or UWI to be displayed with Well name.
- Can select wells from a saved Wells list.
- Batch Operation Process Log panel and Wells panel can now be resized.
- Fill Data Gaps module has been added to the list of available modules that can be run.

CASED HOLE SIGMA:

TDT Standalone Enhancements

- New output QC curves.
- New Sigma Matrix curve. Sigma matrix can now be optionally entered rather than being calculated from Rho matrix.
- Sigma / Phi crossplot with constant Sw lines.

ROCK PHYSICS:

Rock Physics - Laminated Fluid Substitution

- Perform fluid substitution using 'shaley' sand or laminated sand models.

MINERAL SOLVER:

Mineral Solver

- Modeling of uninvaded zone.
- Display movable fluids in log plot model result track.
- Cased hole calculations using Sigma curves.
- New Sw cutoff limits.

STATISTICAL PREDICTION:

Neural Networks

- Train network and then predict curves in other wells - Core Permeability, Log Data and Facies Logs.
- Single or Multi-well.
- Flexible training zones.

SATURATION HEIGHT MODELING:

Interval Loader

- Enhanced for loading Capillary Pressure (Pc) data from spreadsheets.

Saturation Height Modeling

Capillary Pressure Setup module

- New Pc Height, Closure Correction, Pore Size and Pc Normalized output curves.
- Convert Pc pressure to Height above FWL.
- Plug selection grid has been enhanced with plug line colour now being displayed.
- Increased number of defined crossplots.
- Use of discriminators to remove potential bad data
- Sets of discriminators can be assigned to different Pc curves.

Capillary Pressure Function module

- Zones can be used to select Pc data for use in models.
- Each model can have a different set of plugs.
- The current function being worked on is now shown in the setup module for individual plug selection.
- Weighted regression option in the non-linear regression functions.
- Enhancements to the Cap Pressure crossplots.

Log Sw vs. Height Function module

- Weighted regression option.
- Different functions can be developed with the setup saved by function.
- FWL can be set for all wells from the equation tab.
- Data for a function can be selected by zone.

Saturation vs Height Curves module

- Plot includes a pore size distribution track from any Pc curve.
- The report has been enhanced to give the Pc equation for each Well and the Function model equation.
- Can now handle gas over oil reservoirs.
- IFT correction factors can be set for both oil and gas.