

## QuikLook® Reservoir Simulator

Simulation Solutions For Reservoir and Well Optimization

QuikLook® software is an advanced multiphase, 3-D, four-component, non-isothermal numerical reservoir simulator. The simulator is for use in optimizing and designing various well treatments such as fracturing, conformance and sand control. It is capable of predicting production from complex wells and reservoirs.

### For Production and Reservoir Engineers

The QuikLook simulator is designed to be used by the practicing reservoir or production engineer. The simulator provides a logical and very easy-to-use graphical user interface (GUI) for entering complex data required for accurate numerical simulation. The GUI has consistency checks, supplemental plots, interactive graphics and other necessary tools.

The QuikLook simulator has several correlations for reservoir and fluid properties. In addition, several standard types of water and gas shut-off solutions provided by Halliburton are built into the software. The GUI enables the user to enter data, launch the simulation, monitor the simulation run, and analyze the results.

The simulator is linked to WellCat™ wellbore simulator software. The QuikLook simulator is also capable of reading output of StimPlan\* and GOHFER\*\* software describing fracture geometry as well as fluid leak-off for each fracture segment.

### Reservoir Simulation

An arbitrary number of wells with various flow constraints can be simulated simultaneously. Local grid refinement can be used to model near-well effects such as change in flow regime due to fracturing, conformance fluid injection or water coning, in field scale simulations.

### Reservoir Management Applications

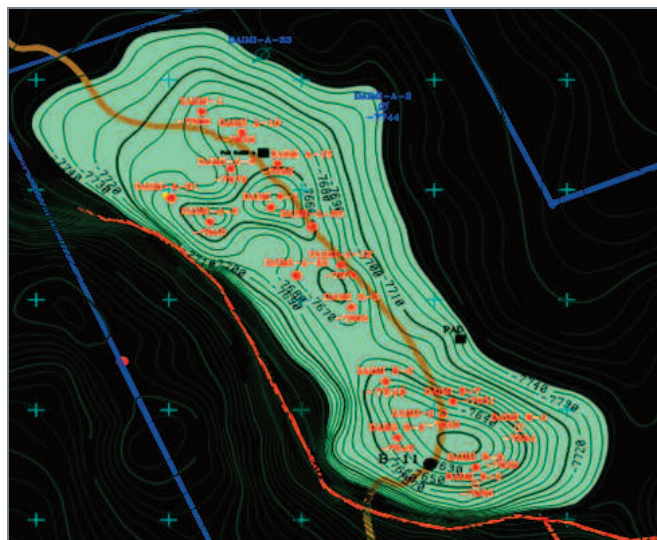
The QuikLook simulator can help predict the outcome of a number of operations in a wide variety of wellbore configurations including multi-lateral:

#### Fracturing

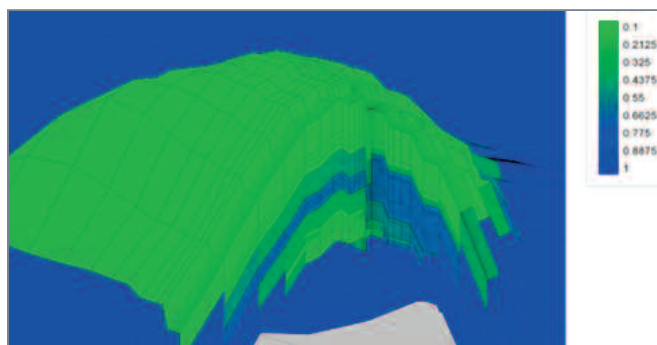
- Fracturing vertical, horizontal and deviated wells
- Clean-up of fracturing fluid filtrate

\*StimPlan is a trademark of NSI Technologies, Inc.

\*\*GOHFER is a trademark of Barree & Associates, Inc.



The QuikLook simulator can readily import reservoir structural maps.



Water saturation distribution and gridding using the QuikLook simulator.

#### Fluid Flow

- Coning effect
- Channeling effect
- Water shutoff techniques

#### Sand Control

- Effect of geomechanics on production
- Combined with a companion Finite Element Simulator, QuikLook simulator can predict the amount of produced sand

### Linkage to Commercial Fracturing Simulators

The ability of the QuikLook simulator to import the output of either StimPlan or GOHFER simulators gives the user of 3-D fracture simulators very quick and accurate access to production prediction using a truly powerful simulator.

An example of fracture shape and initial conductivity distribution as imported from GOHFER software is shown below. The imported parameters include the distribution of fracture width, type and size of the proppant, and the amount of fracture fluid filtrate at each fracture segment. QuikLook software will predict productivity of the fracture(s) considering effect of stress, load cycling, embedment, non-Darcy flow, and change of conductivity with time.

The user may also create a fracture geometry via the GUI.

### General Capabilities

- Both single and dual injection can be simulated as well as heat exchange in the wellbore using built in correlations
- Packer placement and tubing depth can be changed during the simulation
- Geomechanics effect on production can be predicted
- Reservoir response during an underbalanced application (UBA) can be simulated
- Hydraulics table may be also generated

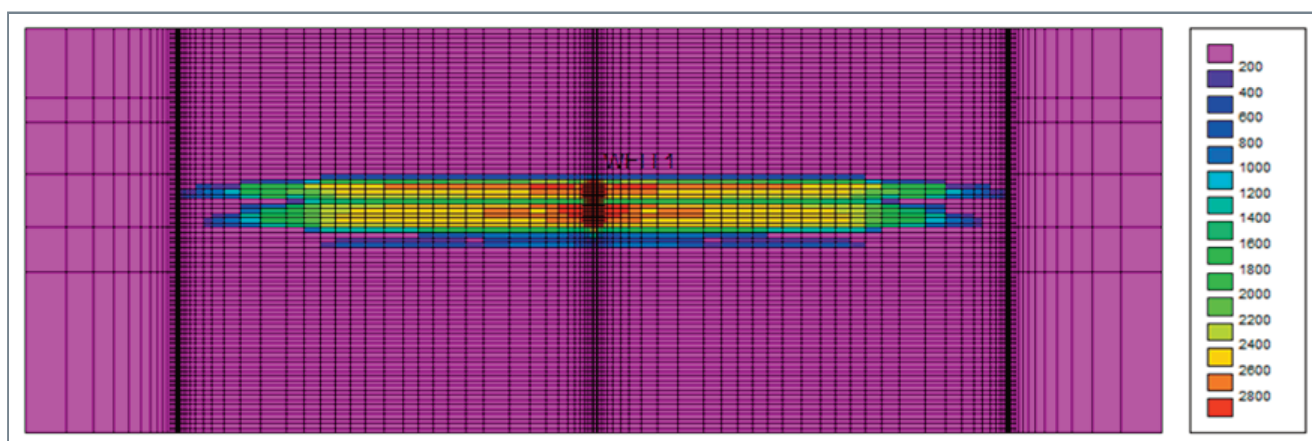
### Reservoir Models

- Homogeneous reservoirs
- Dual porosity/dual permeability reservoirs
- Coalbed methane (CBM), wet or dry
- Fractured shale reservoirs

Heterogeneity may be specified for layers, part of layer or through contouring of properties. Grids and reservoir properties may be imported from VIP® or other software. Gridding and local grid refinement can be accomplished at the push of a button.

### Visualization of Results

The wide array of interactive graphics produced by the QuikLook simulator postprocessor allows simulation results to be clearly presented and quickly interpreted. The results can be displayed as X-Y plots, two and three dimensional maps (pressures, fluid movement, viscosities, temperatures), and animated sequences showing changes in these quantities with time.



HAL32294

An example of fracture shape and initial conductivity distribution as imported from GOHFER software.

**For more information about the QuikLook® simulator,  
contact your local Halliburton representative or email [stimulation@Halliburton.com](mailto:stimulation@Halliburton.com)**

© 2010 Halliburton. All rights reserved. Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale. H07591 04/10

[www.halliburton.com](http://www.halliburton.com)

**HALLIBURTON**

Production  
Enhancement