S&P Global
Commodity Insights

Piper™ Gathering Systems Software

Piper models oil and gas gathering systems from the reservoir to the delivery point, including wellbores, flow lines, and surface facilities. These modeling capabilities, combined with powerful visual diagnostic tools, allow you to identify uplift potential, bottlenecks, and operational issues. Existing and proposed gathering system scenarios can be quickly designed and compared to evaluate economic solutions.

Main Features

Equation of State Modeling

Include gas, water, oil, and/or liquids-rich fluids in your gathering system. You can use Black Oil or Equation of State models including Peng-Robinson or Wilson correlations. Use the thermal model to predict pipeline temperatures and the corresponding effect on phase volumes and pressure losses.

Multiphase Flow

Identify pipeline slugging or efficient flow using the mechanistic Petalas & Aziz flow model. Wellbores can be modeled with empirical correlations including Gray, Hagedorn & Brown, Beggs & Brill.

Connect to S&P Global Commodity Insights' Harmony Reservoir for Oil and Gas Wells

Import horizontal, fracture, EFR, vertical, and asymmetrical multi-frac reservoir analytical models. Forecast your analytical well model under the constraints of your surface system, or run field studies to address the impact of field wide compression, pumping, looping, and other optimization scenarios.

GIS Mapping Tool

Construct proposed and existing gathering systems in a variety of ways: convert shapefiles to facilities and pipelines; import and trace image files; import locations from a spreadsheet. Alternatively a Cartesian grid using drag and drop functionality can be used to build models. Use the newly enhanced printing module to generate plots and map print-outs.

Production Forecasting

Combine deliverability with various reservoir models to forecast future production. Reservoir models include conventional volumetric (tank-type), transient, waterdrive, connected, and geo-pressured. Choose from analytical models, decline profiles, as well as AOF deliverability to account for changing production inflow rates. Account for production from free flowing, pumping or gas lift wells.

Diagnostics

Quickly analyze models using onscreen diagnostics, including color-coded attribute maps, plots, and data exports. Use pressure-based bubble maps to quickly identify high back pressure areas. Use velocity and friction based link maps to identify bottlenecks. Use uplift and drawdown bubble maps to identify wells with significant untapped potential. Visualize the impact on field pressure when implementing development changes like proposed drilling programs, additional compression, or new pipeline loops.

Economics

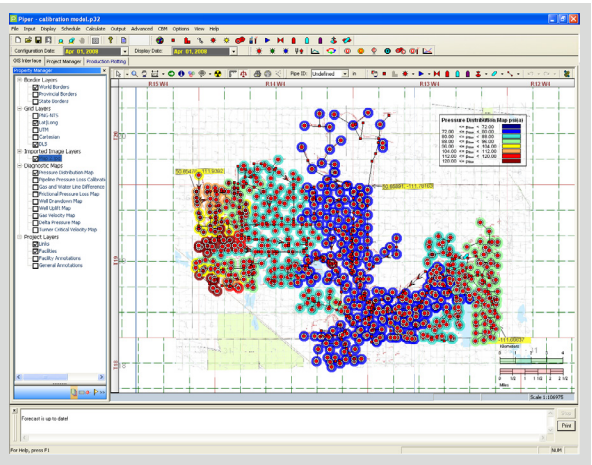
Evaluate the economics of alternate scenarios. Account for the capital costs of adding new wells, facilities and pipelines. Model the fixed and variable costs of operating your system throughout the fields' life. Adjust for inflation and set a discount rate. Specify a price deck based on either volume or energy content pricing. Evaluate individual wells or the system as a whole based on its net present value and cash flow.

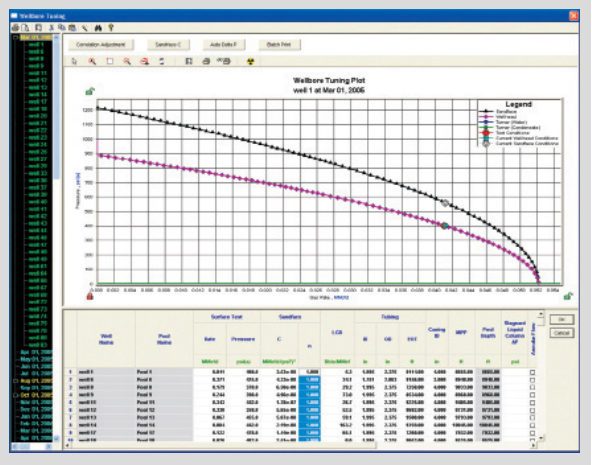
Compression, Pumps, and Pipeline Loops

Gathering system capacity can be modeled to account for facility constraints. Limit facility capacity using pump and compressor curves or compressor horsepower limits. Model current or proposed pipeline loops in multiphase or single phase flow networks.

Project Manager (Time-Based Configurations)

Make changes to a gathering system in the future to forecast the effect of future changes including adding new wells, pumps, looping pipelines, and adding compression.





Screenshots generated from Piper.

Request a free trial now.

For more information spglobal.com/piper.

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