

PipeSoft-2™

Greater Flexibility, Functionality Make PipeSoft-2 the Pressure-Flow Simulation Tool of Choice for Exploitation Technologies



The Source
for Critical Information and Insight™

Case Study

Business Benefits

- A color-coded graphical display gives Exploitation Technologies and clients a quick, easy-to-understand view of changes in pressure and temperature.
- Three network solution methods eliminate mathematical convergence problems found in other models that can consume valuable time and push studies over budget.
- PipeSoft-2 simulates multi-phase fluid flow systems, which lets the firm quickly examine a variety of different choices.
- PipeSoft-2 gives Exploitation Technologies the ability to perform most evaluations with just one pressure-flow simulation tool.

Customer Profile

Exploitation Technologies Inc., based in Calgary, provides E&P consulting to oil and gas companies worldwide. From optimizing wellbore systems, surface gathering networks, pumps and compression, to well test design and analysis and reservoir simulation, the firm offers technology-based solutions to help clients understand and maximize the value of their properties.

Business Challenge

As a consultant, Exploitation Technologies' top priority is providing accurate recommendations to clients, who rely on the information to support key decisions and investments. The capital cost of equipment is such that

even minor design changes can amount to very large sums of money. Clients count on consultants to help them determine the correct answers and save them money, not cost them more. The firm needs efficient, reliable and comprehensive methods for modeling well, pipeline, flowline and gathering networks.

The IHS PipeSoft-2 Advantage

Arvil Mogensen, a partner at Exploitation Technologies and an engineer with more than 30 years of experience, has used a variety of convergence programs in his career. When he and his partners formed the firm a few years ago, Mogensen brought very specific ideas regarding what he wanted in a pressure-flow simulation tool and did considerable research to compare products.

Ultimately he selected IHS PipeSoft-2, a highly sophisticated steady state flow simulator for single or multi-phase fluid systems. It uses rigorous 64-bit numerical solutions of fluid flow laws to simulate pressure,

“The real difference with PipeSoft-2 is the flexibility in the type of problems that the model will accommodate. It offers a lot more capability to do more things all in one model...It's comprehensive enough to assess everything we encounter in the field.”

Arvil Mogensen, Partner

flow and temperature behavior within pipelines and production or injection systems consisting of common well and surface equipment.

Mogensen chose PipeSoft-2 for several key features that weren't present in other tools. The model provides a graphical display that shows system-level results through color coding. With color-coded snapshots of changes in pressure and temperature in the line, Mogensen can get quick overviews of the networks being studied to help determine the amount of pipeline and other facilities that are needed. He can also copy those images into Word documents to simplify presentations to clients.

"I can send clients a picture and they immediately understand what it is," he explained. "My clients are impressed with the efficient display of results from PipeSoft-2, which certainly benefits our consulting company."

These visual elements give Exploitation Technologies and its clients greater confidence in the evaluations, and facilitate rapid decision-making.

Three Network Solution Methods

Mogensen was also attracted by the three network solution methods possible with PipeSoft-2 because one method may not be sufficient in reaching an answer. The available methods include a dynamic network reduction procedure, the Newton-Raphson procedure for calculating pressure residuals, and the Newton-Raphson procedure for calculating flow residuals.

"If you're investing the time to build a model, it's very important that you get the right answer," Mogensen explained. "There are times when one network solution method isn't sufficient. With three calculation algorithms, PipeSoft-2 helps you converge on an answer and gives you the flexibility to handle any problem."

Likewise, PipeSoft-2 offers another level of decision support with the ability to solve networks with complex loops. "Looping that allows flow to get to a point through entirely differently routing differentiates PipeSoft-2 from a lot of other modeling software," Mogensen said.

Exploitation Technologies has found that PipeSoft-2's flexibility also extends to simulation of multi-phase fluid flow systems, accommodating compositional (dynamic), blackoil (including non-Newtonian), condensate and

steam. The application brings efficiency to Mogensen's calculations when modeling pipelines by letting him quickly examine a variety of different choices.

"PipeSoft-2 makes it easy to find which combination is working the best, which saves me time, and my clients money," he explained.

Designed with Users in Mind

Mogensen also appreciates that IHS focuses on developing applications with users in mind. PipeSoft-2's easy-to-use, intuitive graphical interface allowed Mogensen to understand and learn the product without the aid of a manual. With more than 60 sample problems included, he found helpful examples for almost every possible problem.

Additionally, he takes advantage of step-saving navigation features such as the ability to click directly on pipeline icons on the screen to get a pop-up menu, instead of having to rely solely on drop-down menus that require more steps.

Beyond ease of use, Mogensen can also trust that IHS Energy is continuously working to enhance the software and release updates regularly. "So far, the company has followed through with regular updates," Mogensen said. "With a lot of software companies, you just don't see that commitment."

With the large number of PipeSoft-2 users comes a lot of valuable improvements from which all users can benefit and share, which justifies committing to annual maintenance and upgrades, says Mogensen.

Complete Functionality in One Tool

But most importantly, PipeSoft-2 provides the functionality and flexibility Exploitation Technologies needs to derive comprehensive, accurate answers for clients with just one tool. By not having to juggle various programs to reach conclusions, the firm realizes efficiency.

"The real difference with PipeSoft-2 is the flexibility in the type of problems that the model will accommodate," he explained. "It offers a lot more capability to do more things all in one model – heavy oil or gas systems, wellbore and gathering systems, correlations, calculations for pressure drop. It's comprehensive enough to assess everything we see in the field."



The Source

for Critical Information and Insight™

For more information

US

+1 888 OIL DATA

UK

+44 (0) 1666 501226

Canada

+1 877 495 4473

Web

www.ihs.com/energy