Volsung

SOLUTION BRIEF

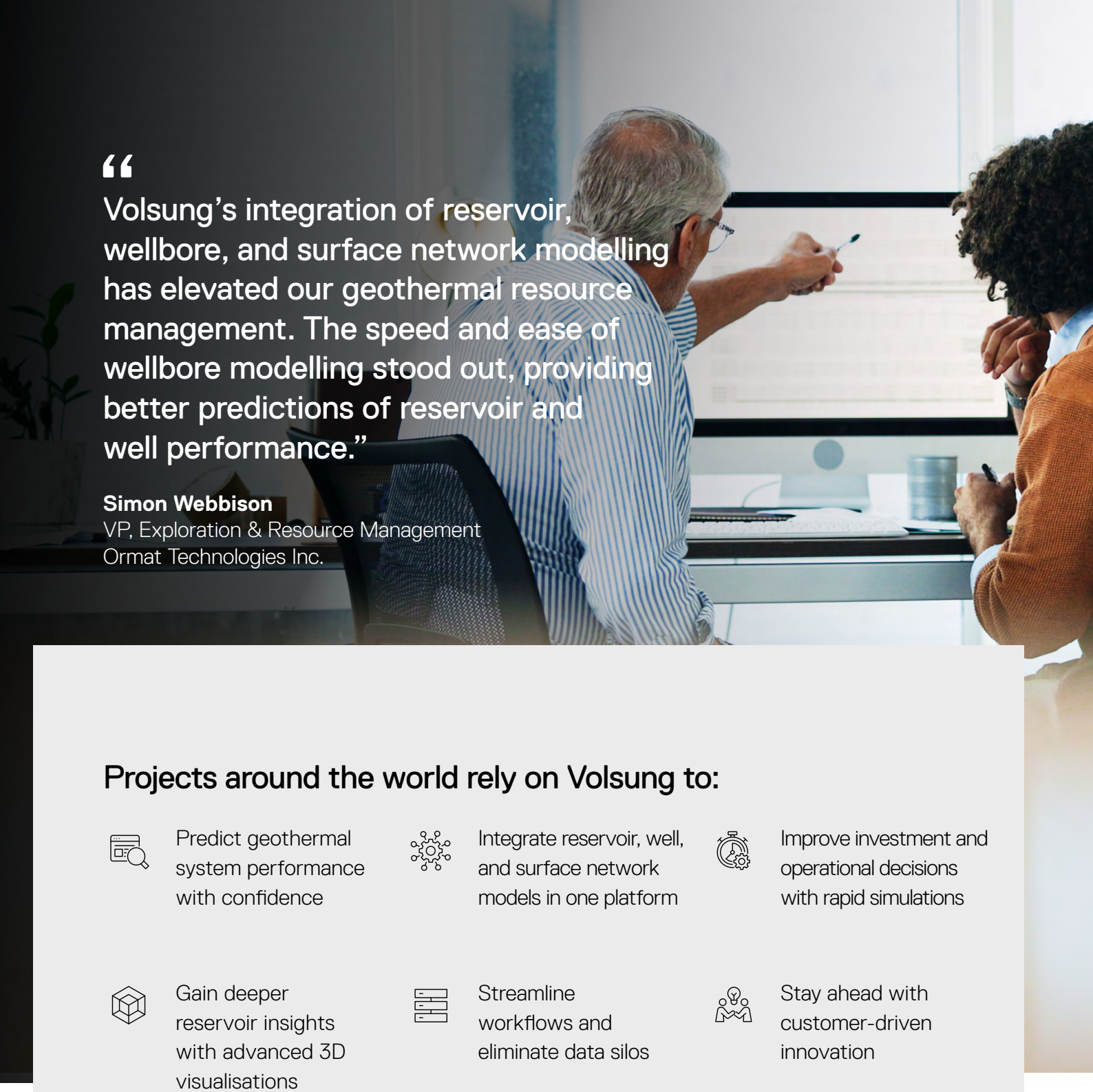
UNLOCK DEEPER RESERVOIR INSIGHTS WITH VOLSUNG

Predicting reservoir performance is critical for reducing risk, securing investment, and maximising resource utilisation in geothermal projects. Yet, engineers face significant challenges—including complex geology, fragmented data, and outdated simulation tools that are slow, cumbersome, and limit collaboration across teams.

Volsung from Seequent is a powerful reservoir simulation solution built specifically to simplify these complex subsurface workflows. Whether you're proving geothermal resource capacity to secure financing, optimising production from wells, or managing reservoir performance, Volsung streamlines reservoir simulations, enabling multidisciplinary collaboration and clear communication of subsurface insights. By enabling rapid model development and integrating surface and subsurface processes, Volsung helps your team confidently forecast reservoir behaviour, minimise operational risks, and optimise your assets across the entire project lifecycle.

SEEQUENT

Seequent, The Bentley Subsurface Company

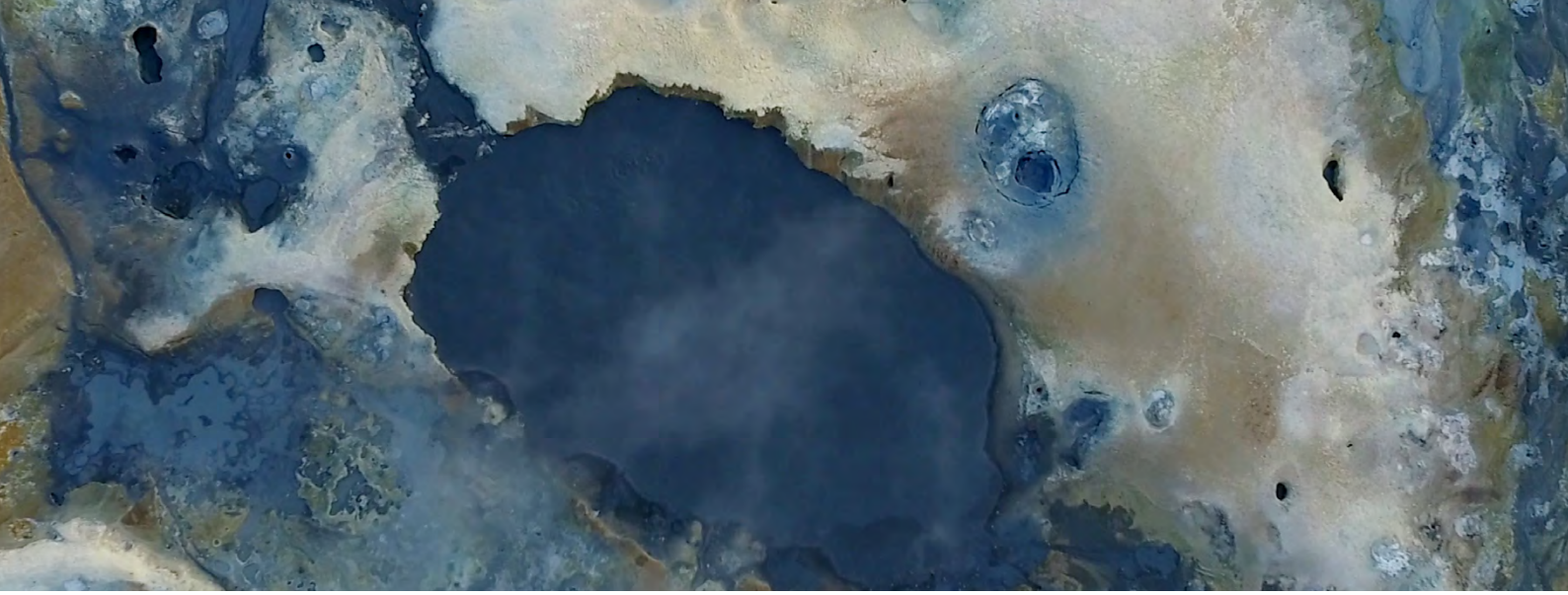


> “Volsung’s integration of reservoir, wellbore, and surface network modelling has elevated our geothermal resource management. The speed and ease of wellbore modelling stood out, providing better predictions of reservoir and well performance.”

Simon Webbison
VP, Exploration & Resource Management
Ormat Technologies Inc.

Projects around the world rely on Volsung to:

- Predict geothermal system performance with confidence
- Integrate reservoir, well, and surface network models in one platform
- Improve investment and operational decisions with rapid simulations
- Gain deeper reservoir insights with advanced 3D visualisations
- Streamline workflows and eliminate data silos
- Stay ahead with customer-driven innovation



Successful projects are powered by Volsung

Predict geothermal system performance with confidence

Reduce uncertainty and gain clearer insights by simulating fluid and heat flow dynamics through physics-based models. Volsung enables teams to confidently forecast geothermal reservoir behaviour and make data-driven decisions that optimise resource sustainability, power generation, and long-term asset performance.

Integrate reservoir, well, and surface network models in one platform

Unlike traditional simulation tools that focus solely on subsurface behavior, Volsung connects reservoir, wellbore, and surface network models for a complete geothermal system view. This unique capability generates realistic models that incorporate the feedback loop between well operations and reservoir dynamics, empowering teams to optimise reservoir development.

Improve investment and operational decisions with rapid simulations

Volsung's advanced GPU-powered solver delivers simulation results up to 25x faster than older geothermal solutions like TOUGH. Rapid scenario testing and reduced simulation times accelerate feasibility and optimisation studies, cut project costs, and support confident investment and operational decisions.

Gain deeper reservoir insights with advanced 3D visualisations

Traditional reservoir simulation tools require deep coding expertise. Volsung simplifies the process with a graphical, user-friendly interface, making it easier for geologists, reservoir engineers, and decision-makers to build, test, and refine 3D models without the need for specialised programming knowledge.

Streamline workflows and eliminate data silos with seamless integration

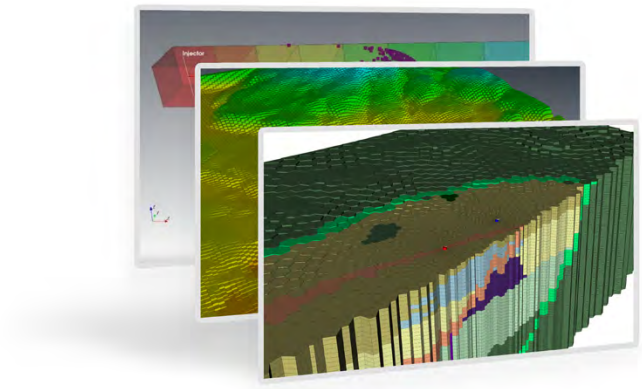
Volsung works directly with Leapfrog Energy to ensure conceptual geological models translate smoothly into simulation-ready reservoir models. The ability to incorporate gravity data for history matching further reduces uncertainty in your decisions, enabling a more connected and efficient geothermal workflow.

Stay ahead with customer-driven innovation

Volsung continues to evolve with new capabilities designed to meet the needs of real-world geothermal teams. From subsidence forecasting and microgravity modeling to Monte Carlo methods and fast simulators, Volsung provides advanced geothermal support. This forward-looking solution, shaped by industry collaboration, offers practical, field-tested innovation.

Explore the key features that power Volsung

Volsung brings together geothermal reservoir, wellbore, and surface modeling into a single, easy-to-use platform. It offers clear and practical insights at every stage of your project.



3D reservoir visualisations

Clearly visualise fluid movement and reservoir dynamics

- Build and refine reservoir models in a 3D graphical interface
- Integrate with Leapfrog Energy's conceptual geological models
- Collaborate effectively with clear visualisations

Fast, holistic reservoir simulation

Effectively simulate fluid flow and reservoir performance

- Run accelerated simulations powered by advanced GPU technology
- Replicate the flow of fluids through rock using heat and mass balance equations
- Confidently assess and forecast geothermal resource potential

Wellbore modelling

Precisely model and optimise geothermal well performance

- Simulate and diagnose wellbore flow conditions
- Predict the impacts of reservoir or operational changes
- Calibrate models to real-world data for reliable forecasting

Inverse modelling and Monte Carlo forecasting

Rapidly calibrate models and quantify uncertainty

- Automatically calibrate models to field data using inverse modelling
- Run Monte Carlo simulations to forecast uncertainty
- Accelerate workflows through cloud-enabled modelling

Pipeline network simulation Optimise surface network design and performance	▪ Simulate pressure drop and heat loss in pipelines ▪ Test pipeline configurations to ensure efficient fluid transport ▪ Integrate pipeline modelling into the complete reservoir-to-surface simulation workflow
Numerical pressure transient analysis (PTA) Gain deeper insights from well tests to enhance reservoir management	▪ Perform detailed numerical PTA using innovative methodologies ▪ Generate standard pressure derivative plots and analyse multi-rate tests ▪ Identify reservoir boundaries and characterise subsurface conditions
Thermodynamic tables Thermodynamic data for geothermal modelling	▪ Query thermophysical properties of geothermal fluids, including supercritical fluid and mixtures of water, salt, CO2, and air ▪ Automate phase transition calculations with integrated Python modules
Collaboration tools Share subsurface insights with multidisciplinary teams	▪ Export and share models ▪ Integrate with your existing geothermal workflows ▪ Break down traditional data silos between drilling engineers, geoscientists, and reservoir engineers

A world of support at your fingertips

Beyond the powerful features of Volsung, Seequent offers comprehensive support to help you get the most out of your investment. Access our knowledge base, connect with technical experts, or explore specific support options for all Seequent products, keeping your projects running smoothly and efficiently.

Learning Centre

Maximise the value of Seequent's solutions with a range of flexible learning opportunities through the Seequent Learning Centre. Whether you prefer online learning paths, on-demand videos, or instructor-led courses, there are resources tailored to your needs.

Explore learning opportunities →

4.9/5
rating for Seequent e-learning from 16,000+ reviews

Community

Connect with a global network of geoscientists and professionals through the Seequent Community. Whether you're looking for peer support, insights from industry experts, or practical tips to get the most from Seequent's solutions, the Community offers a space for shared learning and collaboration.

Join the community →

7,400+
customers in 145+ countries

Support

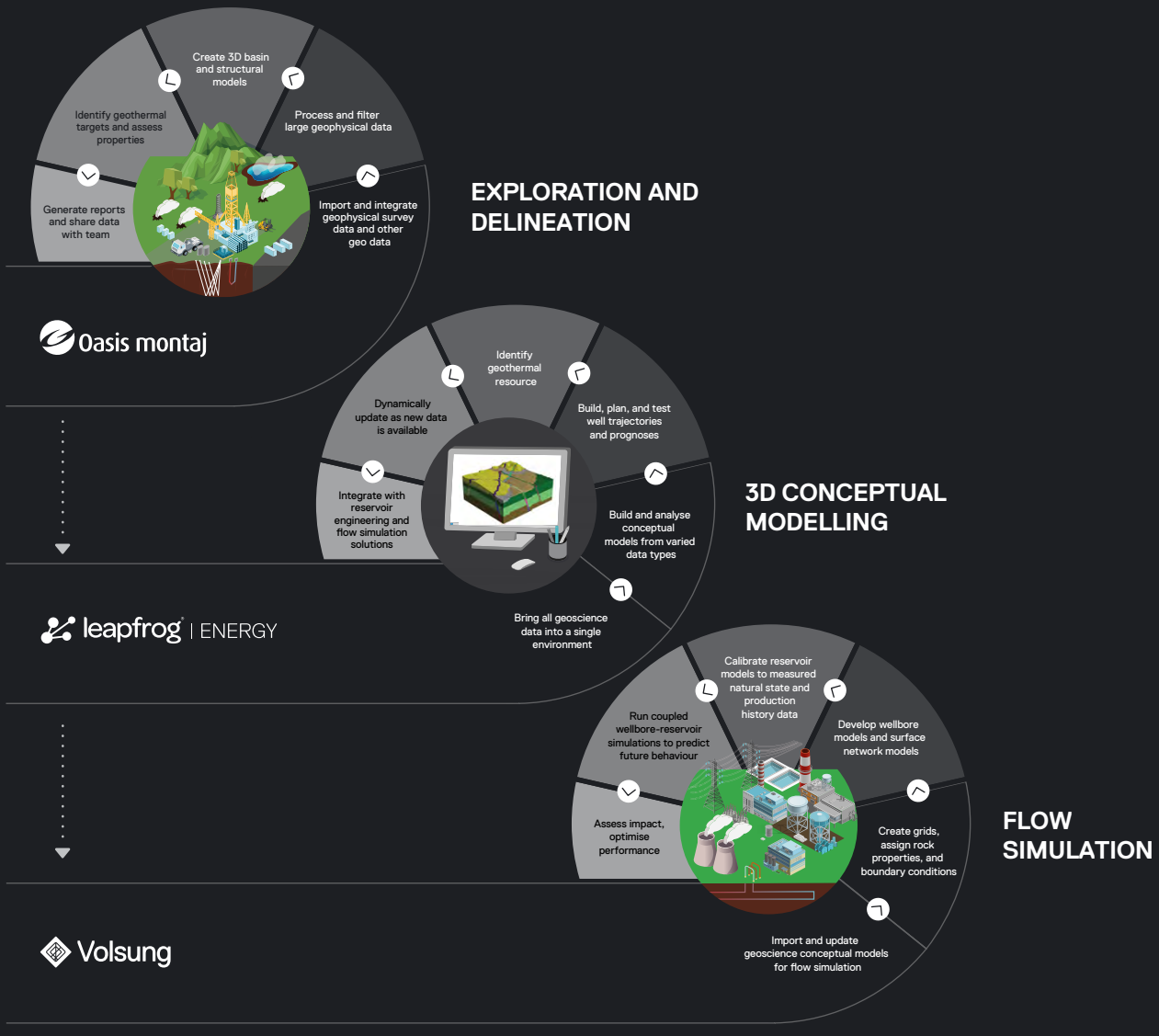
Get the most from your Seequent solutions anytime, anywhere. Access our knowledge base, connect with technical experts, or explore specific support options for all Seequent products, keeping your projects running smoothly and efficiently.

Get support →

95%
satisfaction with our front-line help and support

Intelligent geoscience for energy modelling: See deeper with Seequent

Seequent solutions empower smarter decisions and reduce subsurface uncertainty in geothermal projects from site investigation to long-term asset optimisation.



Discover the power of Volsung today

Visit seequent.com/volsung to explore product videos, customer success stories, or request a free 30-day trial or live demo.

SEEQUENT

About Seequent

Seequent is evolving the way organisations work through better subsurface understanding.

As the world leader in subsurface earth-modelling, analysis and data management and collaboration software, Seequent is at the forefront of building a collective understanding of the Earth.

We hire amazing people who collaborate with our customers to find technology solutions to their challenges that deliver more positive outcomes for a better world.

As The Bentley Subsurface Company, Seequent connects our natural environment with the built world so organisations can manage the impact of their projects at every stage.

See more at **seequent.com/about**

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