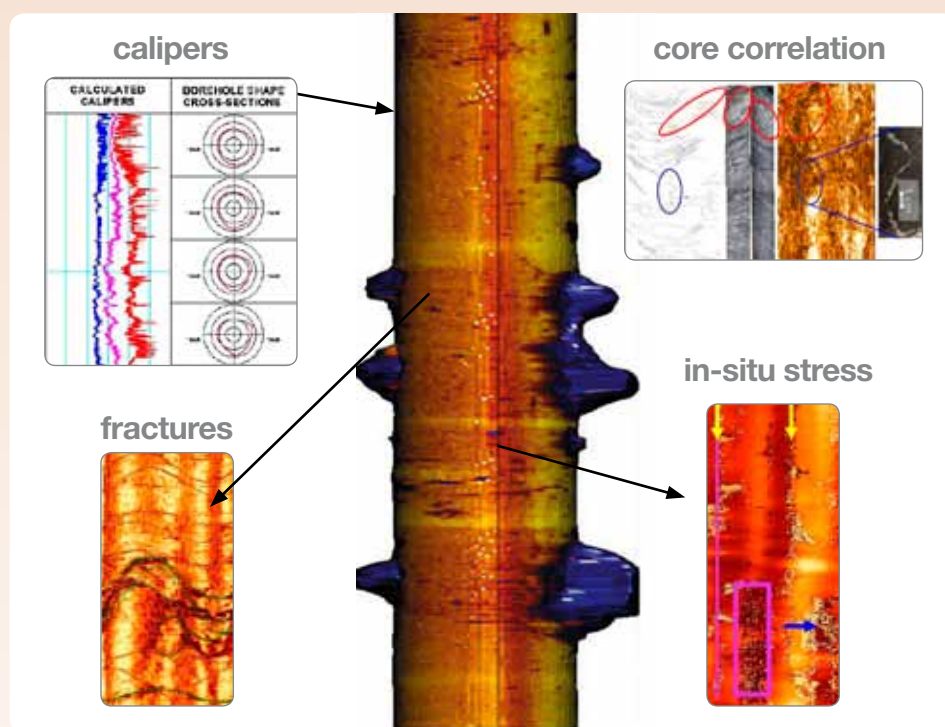


integrated geothermal borehole image analysis

Interpretation and integration of borehole images with wireline, core, geological and drilling data obtained in high temperature resources.



GNS Science provides independent third party interpretation of borehole image data from fractured geothermal reservoirs, with a focus on providing client solutions.

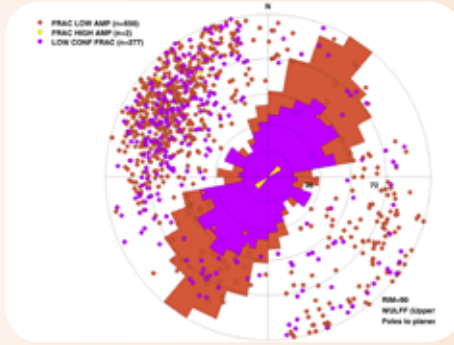
We work closely with logging operators to ensure high data quality and continuous improvement to image interpretation. Analyses are tailored to answer specific questions and geothermal field management issues that help add fiscal and scientific value to a project.

Image analysis is carried out using industry-recognised RECALL™ and WellCAD software, and performed by a team of experienced geothermal and structural geology specialists, with expertise in interpreting images and wireline information from a geothermal perspective.

at a glance →

- **Quality control** Rigorous and verifiable QC procedures are performed, and data can be repaired if applicable.
- **Image processing** Normalisation is used to improve image quality to maximise the opportunities for image interpretation, with a high degree of accuracy and data confidence.
- **Borehole quality** Corrected caliper calculations and 3D borehole displays allow assessment of borehole quality, and identification of damaged zones.
- **PTS integration** Pressure, temperature and fluid velocity profiles are assessed and correlated with borehole image data to assess structural controls on permeability, and to define and refine feed zone placement and extent.
- **Structural analysis** Determination of structural trends, fracture characterisation, and in-situ stress assessment.
- **Integration** Calibration of integrated data and interpretations with known sources; including core, outcrop, regional geology, dynamic data, conventional wireline logs and geophysical data.

Borehole image analysis interpretation & integration



applications for the geothermal industry →

- **Geomechanics** *In-situ* stress orientations and other measurements of stress indicators on borehole images can provide input data for geomechanical models.
- **Research** Cutting edge research in high temperature wireline logging and borehole imaging holds the key to future development and management of conventional, deep seated and EGS geothermal resources.
- **Core correlation** Increase the geologically useful information obtained from core. True core orientation and understanding the image response of different lithologies and minerals can provide a standard for wells that lack core.
- **Reservoir modelling** Borehole image interpretations can supply fundamental data inputs for geothermal reservoir modelling (geology, fluid flow and heat flow).
- **Permeability** High temperature borehole imaging enables characterisation of faults and fractures controlling fluid flow in hot, deep geothermal systems. Structures actively contributing to flow pathways in a well, and in a geothermal system, can be identified.

training →

GNS Science offers a 1-day training course in geothermal acoustic borehole image interpretation. We can deliver group training in New Zealand or internationally.

about us →

The GNS Science geothermal team is internationally recognised for innovative, robust geoscientific research, expertise and consultancy advice. We have been supporting the geothermal community in New Zealand and internationally for over 50 years.

Our experienced professionals integrate geology, geophysics, geochemistry and modelling expertise for exploration, drilling, environmental sustainability, field development, optimal production, and ongoing resource management

contact us →

Contact us to find out how we can address your unique question, and support the success of your project.

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