

## TRACE – Deep Reservoir Analysis and Characterization from Surface (Upper Rhine Rift, Germany)



Source: Florian Freundt, IUP Heidelberg

### Information:

[www.geo-t.de](http://www.geo-t.de)

### Funded by:

**BMW** – Federal Ministry for Economic Affairs  
and Energy

### Start:

June 2012

### End:

May 2015

### Status:

Completed

### Project description

The three-year research project TRACE focused on the exploration of fault-related geothermal reservoirs in the Upper Rhine Rift, Germany, which are difficult to detect from the earth's surface. The project therefore aimed at establishing low-cost methods for identification of permeable fault sections from the surface. The method is based on combinations of natural isotopic and geochemical tracers, that were before successfully tested in the East African Rift. The results will lead to reduced costs for a smaller sized 3D seismic survey and represent a strong indicator for the conceptual model as a basis for well targeting. Furthermore, it is possible to characterize the reservoir fluids prior to drilling work. In summary, the outcome of the project enhances the level of confidence and therefore reduces the drilling risk for geothermal projects in the Upper Rhine Rift. In addition, the method can be transferred to other areas with fault-related geothermal systems.

Funded by:



Federal Ministry  
for Economic Affairs  
and Energy

Funding code

03253590325390

The project was initiated by GeoThermal Engineering GmbH and implemented jointly with the Institute of Geosciences and the Institute for Environmental Physics of the University of Heidelberg. GeoT coordinated the project scientifically and organizationally, provided expert know-how and a data base on existing fluid-chemical/isotopic analyses as well as specialized know-how on the geological /

structural framework in the Upper Rhine Rift. Furthermore, GeoT assisted in sampling site selection, data exchange with water authorities and data interpretation. The company provided data collected from self-owned exploration concessions for calibration purposes and transformed the results into a versatile tool for project developers, including conference presentations concerning implications for a future enhanced geothermal exploration strategy.

The results have been presented at national and international conferences. There is evidence that the natural tracers indicate permeable parts of fault zones, which are characterized by elevated slip- and dilation-tendencies in later geomechanical models. Consequently, planning of the 3D seismic survey can be optimized in terms of best coverage and lowest price, which helps to reduce the exploration risk.

The project was funded by the German Federal Ministry for Economic Affairs and Energy, identification number 0325390.

## Contact

### Dr. Michael Kraml

Research & Development  
Volcanology, Geochemistry

Phone: +49 (0)721 570 44 684

E-Mail: kraml@geo-t.de

## Project partners

- University of Heidelberg – Institute of Geosciences
- University of Heidelberg – Institute for Environmental Physics

---

## Company profile

GeoThermal Engineering GmbH (GeoT) is an engineering consultancy and project developer specialized on deep geothermal energy projects. The company joins a professional and qualified team of geoscientists and engineers and has established itself as a competent and reliable partner for projects in the deep geothermal market. GeoT's portfolio includes the entire project development ranging from planning to supervision of drilling work and plant operation. For international geothermal projects, GeoT is involved in several joint ventures where the company contributes skilled expert know-how. Furthermore, GeoT is integrated in several research and development projects in cooperation with well-known universities and research institutes.

Portfolio:

**Exploration:** geology, geochemistry, geophysics (incl. 2D/3D seismic surveys), geomechanics, hydrogeology, feasibility studies, risk analyses, exploration strategies, well path planning, well site geology

**Consulting:** market research, economic consultancy services, political consulting, business consultancy, due diligence, financing and funding, risk mitigation, project management, public relations

**R & D:** project initiation and funding possibilities, applications, project coordination, networking

– „unlocking geothermal potential“ –

---