

Name: Gabriel Matson

Position: Project Geoscientist

*Technical Expertise: Geological and Geophysical Assessments
GIS and Computer-Based Mapping*



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EXPERIENCE SUMMARY

Gabriel Matson has been with Geologica Geothermal Group since September 2018 and has been working in the geoscience field for the past seven years. With his background in geology, geophysics, and mathematics, Mr. Matson specializes in support for geothermal exploration and resource assessment projects including developing site conceptual models, geophysical data processing and analysis, well testing and analysis, and computer-based mapping. Additionally, Mr. Matson has field experience in potential field (gravity and magnetics) mapping, magnetotellurics, geologic mapping, and sampling.

EXPERTISE

- ArcGIS and other computer-based mapping and geologic software to assess spatial datasets, including the use of ArcGIS Enterprise, Portal, and Server
- Utilizing Rockworks software for stratigraphic and temperature modeling and analysis of well data
- Analyzing and processing magnetotelluric data using CGG Geotools software
- Sampling across various media types (hand samples, soil, coring, fluid, vapor, etc.)
- Geophysical methods including magnetotellurics, gravity, magnetics, and seismology
- Geologic mapping and conducting geophysical surveys

EDUCATION

M.Sc. in Geophysics 2016, Victoria University of Wellington. Research thesis entitled: Microseismicity during geothermal stimulation at the Ngatamariki Geothermal Field: New detections via a matched-filter method

B.S. in Earth Sciences 2012, University of California Santa Cruz

B.A. in Mathematics 2012, University of California Santa Cruz

AWARDS AND CERTIFICATIONS

- California Geologist-in-Training 2017 – Board for Professional Engineers, Land Surveyors, and Geologists
- Mighty River Power Scholarship 2015 – Victoria University of Wellington. Awarded for M.Sc. Thesis work at the Ngatamariki Geothermal Field.

REPRESENTATIVE PROJECT EXPERIENCE

Selected Geothermal Resource Development Projects

Domestic Projects

CalEnergy Salton Sea

- Providing on-site technical support including developing transient temperature model to assess reservoir conditions and GIS support including the supporting the implementation

of the ArcGIS Enterprise 2019 rollout and ArcGIS Portal Web App development at the **Salton Sea Geothermal Field, California**

Blundell Roosevelt Hot Springs

- Providing on-site supervision of mechanical integrating testing and static pressure-temperature surveys of injection wells. Providing historical document review and organization to assess historic wellhead-injectivity at the **Roosevelt Hot Spring Geothermal Field, Utah.**

Fervo Energy

- Providing on-site supervision of fishing job at the **Blue Mountain Geothermal Field, NV.**

Waunita Hot Springs Geothermal Prospect

- Providing assessment of geologic and geophysical data to develop a preliminary conceptual model and target an initial observation well at the **Waunita Hot Spring Geothermal Prospect, Colorado.** Utilizing ArcGIS to compare and assess available geological and geophysical data sets.

Sacramento Delta Velocity Logs

- Utilized ArcGIS to digitize velocity logs for water wells in the **Sacramento Delta Region, California** for future work to develop a velocity model and seismic hazard assessment of the area.

International Projects

Electricity de Djibouti

- Providing assessment of well logs, geophysical data, and regional geologic setting to support the resource assessment and develop a conceptual site model at the Fiale Caldera in the **Lake Assal Region, Djibouti.** Utilizing ArcGIS and Rockworks to map, model, and analyze spatial data at the Fiale geothermal project.

Ngatamariki Geothermal Field

- Applied statistical cross-correlation methodology to group microearthquake swarms and detect microearthquakes to expand the seismic catalogue during a two-month cold water stimulation period at the **Ngatamariki Geothermal Field, New Zealand**
- Applied double-difference methodology to precisely and accurately detect microearthquake hypocenters.
- Utilized GIS programs including ArcGIS to analyze spatiotemporal relationships and trends within the microseismic catalogue.

PT Sokoria Geothermal Indonesia

- Providing assessment of geophysical and geologic studies to assess and develop a conceptual site model, resource capacity estimates, and preliminary development plans at the Sokoria Geothermal Field in **Flores, Indonesia.** Utilizing ArcGIS and Rockworks to map, model, and analyze spatial data at the Sokoria Geothermal Field.

PT Sorik Marapi Geothermal Power

- Providing assessment and review of geophysical studies, well data, and geologic mapping to update conceptual model and well targeting at the Sorik Marapi Geothermal Field in **North Sumatra, Indonesia.** Utilizing ArcGIS to display and model field wide spatial data including well, geologic, geophysical, and geochemical datasets.

Greater Leyte Geothermal Area

- Providing assessment and review of well and geologic data to assess issues at the Greater Leyte Geothermal Area in **Leyte, Phillipines.** Utilizing ArcGIS to analyze field wide spatial data trends.



Bweengwa River Geothermal Area

- Providing assessment and review of well, geologic, geophysical data to build a conceptual models and target wells at the **Bweengwa River Geothermal Prospect, Zambia**. Utilizing ArcGIS to analyze field wide spatial data trends.

Rajabasa Geothermal Prospect

- Providing analysis of geological, geophysical, and geochemical data to assess an existing conceptual model at the **Rajabasa Geothermal Prospect, Indonesia**.

PUBLICATIONS

V.E. Langenheim, T.M. Brocher, D.K. McPhee, T.E. Earney, C. MacPherson-Krutzky, K.S. Morgan, **G. Matson**, and R.S. McFaul, 2018, *Digitized sonic velocity log data of the Sacramento Delta region, California: U.S. Geological Survey data release*, <https://doi.org/10.5066/P9PYUFI7>.

G. Matson, M.K. Savage, and J. Townend. *Microseismicity at the Ngatamariki Geothermal Field, Taupo Volcanic Zone, New Zealand: Determination and implementation of a matched filter threshold*. In AGU Fall Meeting 2015. American Geophysical Union, December 2015. abstract S51D-2738.

J.R. Peakcock, D.K. McPhee, D.A. Ponce, M.T. Mangan, C.C. MacPherson-Krutzky, and **G. Matson**. *Three-Dimensional Visualization of Mono Basin, California from Geophysical Studies*. In AGU Fall Meeting 2013. American Geophysical Union, December 2013. abstract V11D04.

V.E. Langenheim, D.S. Sweetkind, K.M. Schmidt, and **G. Matson**. *Fault Evolution in the Onshore Santa Maria Basin, California, as Inferred from Gravity and Magnetic Anomalies*. In GSA Annual Meeting & Expo 2013. Geological Society of America, November 2013.

