

2012 Geothermal Technologies Student Competition

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Geothermal Project Title

Geothermal Exploration of the NE Snake River Plain by GIS, Statistical Analysis, and Geochemical Sampling

Approach and Methodology

This project will focus on identifying potential geothermal resources within the northeastern region of the Snake River Plain (SRP). The study area will extend approximately 300 km from Craters of the Moon National Monument to the Idaho/Wyoming state border. The northeastern region of the SRP is of interest due to the fact that it is a young volcanic zone, close to the Yellowstone hot spot, with higher heat flows than other parts of the SRP (Pierce and Morgan, 1992; Blackwell, 2011). Of particular interest are the margins of the plain, where the aquifer is considerably thinner than it is within the heart of the SRP; thus, geothermal potential along the margins would less likely be masked by groundwater flow. Finally, the limited availability of geothermal data within the eastern half of the plain, compared with other regions of the SRP, offers greater potential for new discoveries. The project will begin with a data discovery phase in which information is acquired and analyzed in ArcGIS, followed by a geostatistical analyses phase in which geothermal potential is weighted and promising areas identified. The study's third phase will involve collection and analysis of geochemical data to further confirm or invalidate site favorability. In the final phase of the project, team members will prepare a final report describing the detailed methodology used in the study and a summary of findings.