Finding Geothermal Drilling Locations and Depth in Turkey



Objective: Use resistivity and other geophysical methods to to determine the possible geothermal potential zones and determine drilling location and depth.

Survey site: An undisclosed site in Turkey

Instruments Used: The SuperSting™ R1/IP/SP System, manual cables

BACKGROUND:

This geothermal energy project's goal was to find optimal locations for natural hot springs. Not only was the location important, but the depth of the water as well.

PROCESS:

A total of 122 VES (Vertical Electrical Sounding) measurements, as well as Gravity, Radon, and CO₂ measurements were performed on the 7x10km study area in Turkey. A SuperSting R1/IP/SP instrument was used for 122 Schlumberger VES measurements. The client used their own manual cables.

RESULTS:

The VES data was evaluated with Radon, CO₂, and Gravity data which identified three potential drilling zones.

The drilling at one of these zones confirmed a 49°C production temperature and 140l lt/sec flow rate of production.

(Results continued on next page)



Pictured above: The SuperSting™ R!

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RESULTS (CONT'D):



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CASE HIST[®]RY

RESULTS (CONT'D):



The VES data along a 2D line are mapped with AB/2 versus Apparent Resistivity.

The 2D inversion is obtained from a combination of VES data along the 2D line. The possible faults are highlighted on the 2D sections.

The 3D view of parallel 2D sections shows clearly the lateral variation of the low resistive zones not only along the line but also the cross line.

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RESULTS (CONT'D):



Aparent Resistivity AB/2=800m Level Map



The AB/2=800 apparent resistivity level map indicates the possible low resistive contact zones at about less then 20 Ohm-m and has good conformity with Bouger anomalies corresponding the same lithological zones.

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