

New Software Use

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ABSTRACT

This software is used for new geothermal research and exploration. But here it will be used at the development stage. We used it to produce topographic maps based on input of real coordinates in 2D and 3D applications. These programs take input from geophysical data and geochemical minerals data, well logging data, thermic fraction rocks, lithology- lithostratigraphy, tectonic dip and fault etc. based on their evolution. We used the programs with special data, for example fluid inclusion, liquid fraction, thermic data, to visualize 2D, 3D and 4D time period reservoir controls on well data etc.

1. INTRODUCTION

The needs of the developing world are increasing every day. Awareness of the usefulness of geothermal to people is increasing. In particular, thermal tourism, health tourism, Spa, etc. From day to day, developments in this sector of the terrain data requires a good interpretation. Land and laboratory studies must support each other. However, this data must be supported with appropriate software that better results would take a function like this in this programs.

2. LAND SECTION

2.1 Topographic Maps Are Made on the Geological Map

In this section; stratigraphic, lithologic and tectonic land belonging to the geological time unit data is processed.

2.2 Geothermal Field Data Related to Land Are Added to the Predecessor

Well head, production wells / unproduction wells, injection wells, idle wells, Penetration, fumerole, hot spring, gas seep, produced well, pad location etc. In this section belonging to water chemistry data is entered.

2.3 Point Land on the Water Determined Data

Point land on the water output is determined and the relevant measurement are made. Samples are taken and the corresponding worksheet is added.

2.4 Geochemistry

Where samples are taken from alteration minerals. Laboratory examination of the data is recorded in a worksheet

2.5 Geophysics

This section works with the electric resistivity method. Other geophysical method has been under construction. Work to determine the profile points and points belonging

to this profile DES point, resistivity value is measured and this data is written in a worksheet.

3. WELL SECTION

In this section, drilling mud and cut into units belonging to the lithologic stratigraphic section of the information is entered.

3.1 Adding Worksheet to the Drilling of the Data

3.2 Geophysical Log Data for the Well of the Worksheet by Adding

Geophysical log data reception is the part that was entered.

4. MENU SECTION

By using the previously entered data, we can get the results we want using the worksheet. Purposes in accordance with the necessary land section; both well to the data section. Using menus to the graphics, its log files transferred, the necessary calculations, models, maps (2D, 3D) etc.. A section is shown in fig.1. The following examples are based on figure 1.

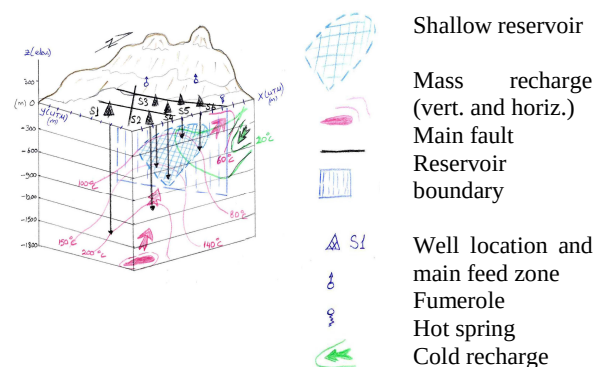


Figure 1. On a topographical map imagery is added. Well location, Steam output of the source, fault locations were also added. Transactions are then converted into a 3D surface.

5. DISCUSSION

Outlined in the section up to here with the program and trying to promote the functioning of the not yet completed. Data shows a few examples. Some sections are still under construction. Some parts of the program is written specifically for the preparation of the menu has been partially realized using Rockworks.

The reservoir section is almost completed. There are section of the program can not be tested. The information about the contents briefly tried to give a lot more about the program

that can be written. But here a brief summary is provided for informational purposes only. This new program add-ins have become more understandable for the poster has been prepared, includes descriptive information.

REFERENCES

- Bonham-Carter, G.F.: Geographical Information Systems for Geoscientist. Modeling with GIS. Computer methods in the *Geosciences*, vol. 13. Pergamon, New York, NY, USA (1994), 398.
- Clarke, K.C.: Getting Started with Geographic Information Systems, second ed. Prentice Hall, Upper Saddle River, NJ, USA (1999), 338.
- ESRI.: Using Arcmap 9.1. Environmental Systems Research Institute, Redlands, CA, USA (2005), 598.
- Noorollahi, Y., Itoi, R., Fujii, H., Tanaka, T.: GIS Model for Geothermal Resource Exploration in Akita and Iwa Prefectures, Northern Japan. *Comput. Geosci.*, 33, (2007), 1008-1021.
- Verma, A., and Pruess, K.: Enhancement of Steam Phase Relative Permeability Due to Phase Transformation Effects in Porous Media, *Proceedings*, 11th Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, CA (1986).