

NOTICE CONCERNING COPYRIGHT RESTRICTIONS

This document may contain copyrighted materials. These materials have been made available for use in research, teaching, and private study, but may not be used for any commercial purpose. Users may not otherwise copy, reproduce, retransmit, distribute, publish, commercially exploit or otherwise transfer any material.

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted material.

Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specific conditions is that the photocopy or reproduction is not to be "used for any purpose other than private study, scholarship, or research." If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of "fair use," that user may be liable for copyright infringement.

This institution reserves the right to refuse to accept a copying order if, in its judgment, fulfillment of the order would involve violation of copyright law.

UTAH'S DOE/DGE STATE COUPLED PROGRAM 1979

Peter J. Murphy

Utah Geological & Mineral Survey

The Utah Geological and Mineral Survey (UGMS) has been involved in the DOE/DGE state coupled geothermal program since August, 1977. Until May of 1979, the primary focus of the program was the site specific investigations of selected thermal springs of the Wasatch Front. Activities at these sites included: geologic reconnaissance, shallow ground temperature surveys, and 90 meter thermal gradient holes. Ten holes were drilled at five sites. From May to October, considerable effort was made to incorporate the new spring data and existing information into reports of investigation. Four reports outlining UGMS activities at 7 geothermal sites will be available in the near future.

As of May 1979, the thrust of the UGMS program has changed considerably. Site specific investigations have been limited to geophysical surveys at four sites. Two sites (Crystal, and Utah hot springs) received detailed gravity and aeromagnetic coverage. The remaining two sites (Udy and Crystal (Madsen) hot springs) received only detailed gravity coverage. The main emphasis of the program is presently an area wide investigation of Jordan Valley (valley portion of Salt Lake County). The objectives of the Jordan Valley project are: a) to delineate potential low temperature resource areas, and b) to define geological, structural, and hydrogeological conditions in these potential areas.

To accomplish these objectives the Jordan Valley investigation includes:

- a) the compilation of existing geologic, hydrogeologic, and geophysical data. Because the area is a major population center of the state, several significant investigations do exist.
- b) a water well survey: this survey will provide valuable subsurface geological data, and wells located in the survey will be used to obtain appropriate measurements from the valley fill aquifers.
- c) geophysical surveys: gravity surveys and to a lesser extent aeromagnetic surveys will be used to delineate structures buried beneath the variable thickness of valley fill in the graben.

The water well survey is a very important portion of the entire program. Well logs for wells drilled throughout the valley are obtained at the State Engineer's office. Locations of the wells as indicated on the well logs, are plotted on 7½ minute quadrangles. Locations are checked and well status is determined by field checking. After a large number of wells have been field checked, then temperatures, thermal gradient, and water samples are collected, as appropriate, from selected wells.

In addition to the parameters mentioned above, well information will also be used, where appropriate, to supply control for the geophysical surveys. Realistic models of the range-front structures, that often influence the nearsurface expression of the resource, can be obtained when measured depths to consolidated material are available.