

memorandum

DATE: DEC 6 1979

REPLY TO
ATTN OF:

GL04219

SUBJECT: Submission of Data to File GEOTHERM

TO: State Coupled Teams

As part of the assessment of the Nations' geothermal resources the U.S.G.S. has been responsible for collecting data from diverse sources and placing those data into a computer file. As part of your contract with DOE you are required to supply to supply information to other Federal agencies as requested by DOE.

We are hereby requesting that the following be supplied to the U.S.G.S. and that new data be sent as they become available:

Information on Wells and Springs

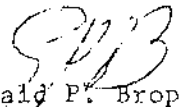
1. Name or some other I.D. for a spring/well
2. Lat-Long to nearest 1/10th of a degree
3. Township and Range where available
4. County
5. Reference to source of data, even if unpublished
6. Temperature
7. Well depth (either T.D. or depth to producing zone)
8. Do not include thermal gradient data
9. Do not include bottom hole temperature from oil and gas wells
10. Map reference (U.S.G.S. quad, etc.) if possible
11. Water chemistry if available

These data should be sent to:

James Swanson
U.S. Geological Survey
Mailstop 84
345 Middlefield Road
Menlo Park, CA 94025
Phone: 415-323-8111 x 2906
FTS-467-2906

Jim says that data input cards are available if you want them. He also requests that if data are going to be transmitted or tape that you contact him first.

Thank you for your assistance.


Gerald P. Brophy
Division of Geothermal Energy

Enclosure

memorandum

DATE: DEC 6 1979

REPLY TO
ATTN OF:

SUBJECT: State Geothermal Resource Maps for Public Use

TO: State Coupled Resource Assessment Teams

The principal objective of the State Coupled program of the Division of Geothermal Energy (DGE) is the production of a set of maps that provide potential users of geothermal energy with information concerning the resources in the respective states. To accomplish this end we have contracted with NOAA to assemble data provided by state teams and publish the resulting maps. We have decided that we can accomplish this goal by doing the following:

- (1) Publish two map series for each state, one for use by the public in general, and one designed for use by appropriate scientific groups.
- (2) Establish uniformity of data transmitted to NOAA.
- (3) Establish uniformity of data display.

Geothermal Map Series

Three states (Arizona, Nevada, Oregon) have published maps in-house, and most of you have copies of these (if you do not have copies, write to me for them). Each map is a valuable contribution and has been widely distributed throughout the country to a most diverse audience. One problem, however, is the large variation among the three of the amount of data displayed and the way in which they are displayed. We have decided therefore to standardize as much as possible what future maps will present.

The first map we will produce for each state will be a "public use map." On this map will be shown the information published in USGS Circular 790, and additional specific information gathered by the State teams.

The "scientific user map" will be the second in the series, and details concerning the data sets to be included are still in the formative stage. At this juncture it would be helpful if each team would send to the contacts listed at the end of this memorandum a list of what scientific data they feel should be displayed (faults, lineaments, young volcanics, etc.) to help us in attaining uniformity.

Public Use Map

Following a series of meetings among DOE/UURI/LASL/NOAA/States it has been decided that the following will be included:

1. Topography
2. Culture
3. Political boundaries
4. Surveyed data (T,R)
5. Permanent drainage
6. Forest lands
7. Reservations, Indian and military
8. Wilderness and other lands off limits to exploration
9. Federal and State KGRA's
10. Spring and well data
11. Other that might be pertinent for a particular map

NOAA will provide the base maps to include items 1 through 9. They will need the following from each state team:

1. Name of Spring/well
2. Depth of well (meters)
3. Total dissolved solids (mg/l)
4. Temperature (°C)
5. Flow rate (l/min.)
6. Latitude and Longitude (where available)

These data can be supplied in Table form, on magnetic tapes, on cards, or hand plotted on a mylar supplied by NOAA. Also on mylar supplied by NOAA you will be requested to outline areas of potential resources as was done on the Circular 790 maps and the three published State Maps. We request you also supply the following:

1. Any heat flow data
2. Any squibs (explanations) you might wish to have included on the map (see 790 maps)
3. State GRA boundaries, if any.

Well-Spring Data Display

Attached is a sheet showing how the data supplied will be displayed, and some explanation is required.

Symbol - diamond for spring dot for well

Color - Red + 50°C
Blue - 50°C

Data display - $\frac{\text{Temperature}}{\text{TDS}}$ / $\frac{\text{Flow}}{\text{depth}}$

You will note on the sample supplied that where information is lacking the appropriate slot will be blank. Also for those springs where only temperature is available only the temperature data will be given.

A conversion table to English units will be given on each map.

Not shown on the sample, but to be included will be a number in parenthesis by each symbol which will be keyed to a table listing the well/spring name and precise location if available.

The symbol size may vary depending on the amount of congestion on the map. Insets may also be required. NOAA and the state teams will discuss these matters at the appropriate time.

We realize that there has to be some flexibility in the above. For example, stacked aquifers in the Plains States will require some divergence from what has been outlined, and we will have to meet and work out some alternate scheme.

Credits.

The maps are the product of the work of the State teams, and they will receive the appropriate recognition. The maps are paid for by DOE, and produced by NOAA and both these organizations will be credited. We intend therefore to place on the map the Seal of the State or State Survey or State University, as well as the Seals of DOE and NOAA, and the names of the state team members responsible for the data collection and interpretation.

Contacts:

NOAA - Paul Grim
Code D64
NOAA/EDIS
Boulder, CO 80303

FTS - 323-6418
Comm. 303-499-1000 x 6418

UURI/ESL - Duncan Foley 801-581-8308
UURI/ESL
420 Chipeta Way, Suite 120
Salt Lake City, UT 84108

DOE - Gerald Brophy 202-376-4898
DOE/DGE FTS-376-4898
MS. 3122C
20 Massachusetts Avenue
Washington, DC 20585

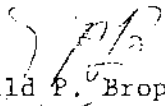
Meetings.

As we get to the publication stage a meeting or series of meetings between NOAA/DOE/UURI and the state team will be held to assure satisfaction with the final product on the part of everyone involved.


Questions.



Don't hesitate to call any or all of the contacts.



See you in Salt Lake City on January 22-24, 1980, when we will have our next annual meeting of the State Coupled Program.




Gerald P. Brophy
Division of Geothermal Energy




Enclosure

 $\frac{32^\circ}{100} \backslash 304$

$\frac{32^\circ}{366}$  Well No. Eleven  $\frac{67.8^\circ}{800} \backslash 1408$

$\frac{52^\circ}{12000} \backslash 612$   $\frac{46^\circ}{1120} \backslash 168$

Phillips Springs  21°  Indian Spring $\frac{50.6^\circ}{3600} \backslash 30$

$\frac{23^\circ}{7000} \backslash 200$  San Ysidro Hot Springs 29°   San Ysidro Warm Springs $\frac{20^\circ}{150}$

Principal Investigators - State Coupled Program

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Alaska	Don Turner Ross Schaff Department of Natural Resources Division of Geological & Geophysical Surveys P.O.Box 80007 College, Alaska 99701	907-479-7198 907-277-6615
Arizona	Richard Hahman Bureau of Geology & Mineral Tech. 2045 N. Forbes Blvd., Suite 106 Tucson AZ 85705	602-626-4391
California	Roger Martin CA Div. Mines and Geology Resources Bldg., Rm. 1341 1416 Ninth St. Sacramento CA 95814	916-445-1923 FTS 465-1923
Colorado	Richard H. Pearl CO Geological Survey 715 State Centennial Bldg. 1313 Sherman St. Denver CO 80203	303-839-2511
Hawaii	Chuck Helsley	808-948-8760
Idaho	John Mitchell Dept. Water Resources Statehouse Boise, Idaho 83720	208-384-2215
Kansas	Don W. Steeples KA Geological Survey 1930 Avenue "A", Campus West U. KA Lawrence, KA 66044	913-864-4991
Mississippi	William Moore MS. Geological Survey 2525 N. West St. P.O.Box 4915 Jackson, MS. 39216	601-354-6228
Montana	John Sondregger MT. Bureau Mines & Geology Butte, MT 59701	406-792-8321 x241

Nebraska	Marvin P. Carlson NB Geological Survey 901 N. 17th St. Lincoln, NB 68588	402-472-3471
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	Chandler Swanberg Marshall Reiter	505-646-3831 505-835-5306
New York	Burton Krakow NY Energy Research & Devel. Auth., Agency Bldg. #2 Rockerfeller Plaza Albany NY 12223	518-465-6251
North Dakota	Kenn L. Harris N.D. Geol. Survey U. ND Grand Forks, ND 58202	701-777-2231
Oregon	Don Hull Dept. Geology & Mineral Indust. 1069 State Office Bldg. Portland, OR 97201	503-229-5580 ITS 424-55
Texas-general	Charles Woodruff Bureau Economic Geology U. TX University Station, Box X Austin, TX 78712	512-474-5994
Texas-west	David White Texas Energy & Nat. Resources Advisory Council 7705 North Lamar Ave. W. 13 th St. Rm 800 Austin Tx 78758 78701	512-475-5588
Utah	J. Wallace Gwynn UT Geological & Mineral Survey 606 Black Hawk Way Salt Lake City UT 84108	801-581-6361

Washington	Eric Schuster WA State DNR Div. Geology & Earth Resources Olympia WA 98504	206-754-1616
Wyoming	Ed Decker Dept. Geology U. WY P.O.Box 3006 Laramie, WY 82071	307-766-3278
Atlantic Coastal Plain	John Costain Dept. Geology VPI&SU Blacksburg VA 24061	703-961-5096
Eastern and Central States-general	Joel Renner Groy Federal Inc. 2001 Jefferson Davis Hwy Suite 700 Arlington, VA	703-892-2700
Western States and Plains States	Duncan Foley UURI/ESL 420 Chipeta Way, Suite 120 Salt Lake Cit UT 84108	801-581-8308