

GLO2734-1



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
Room 365, Federal Building, Box 036
550 West Fort Street
Boise, Idaho 83724

March 28, 1977

Mr. John Barrutia
Mountain Home Air Force Base
Mountain Home, ID 83647

Dear Mr. Barrutia:

This letter is in response to our meeting at the USGS office on March 24, 1977, concerning the potential for utilizing geothermal water for space heating at the Mountain Home Air Force Base.

Hot Springs and wells are present 8 to 15 miles east and northeast of the city of Mountain Home, and there are numerous hot irrigation wells in the Bruneau-Grand View area south of the Snake River. These facts are more than adequate to justify a preliminary study of a potential geothermal resource that might be of interest to the Air Force Base.

The following is a very brief outline of program elements designed to establish firm evidence that geothermal fluids are or are not present in the vicinity of the Air Force Base and the general extent and suitability of the fluids for heating or other purposes if they are present. The procedures are subject to suggestions and modifications by the Geological Survey and the Air Force at future discussions.

Phase I: Bring together existing geologic, hydrologic, and geophysical data and prepare a summary report. The results would be useful and necessary in determining the type and magnitude of field studies needed to meet project objectives. Two to four months would be required to compile the data and prepare a memorandum report.

Phase II: Detailed geologic mapping, several types of geophysical surveys, and hydrologic data collection, including geochemical work. A limited amount of exploratory drilling might be desirable in this phase, but that would have to be determined early in Phase II work. Includes completion of progress reports. Estimated time required--6 to 10 months.

Phase III: This phase would emphasize exploratory drilling, not only to examine a potential geothermal aquifer, but to verify geologic, hydrologic, and geophysical interpretation. Includes completion of progress reports. Estimated time required--18 to 24 months.

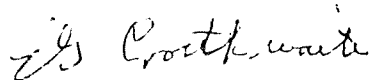
Phase IV: Phasing out of the USGS participation in the study and the beginning of actual utilization of the geothermal resource. This includes preparation of final reports.

As indicated previously, the above is a bare outline of project items. Phase I could probably be accomplished in a short period of time within the existing program of the Geological Survey with possibly a small financial contribution (a few thousand dollars), but the decision lies with Dr. Robert Christiansen, the Survey's geothermal coordinator at Menlo Park, California. Time and cost of Phases II-IV are difficult to determine at this stage of discussion, but some approximation of cost can be estimated. Phase II could cost \$100-200,000, Phase III could cost \$200-400,000, and Phase IV could cost \$400,000-5 million. Exploratory and production-well drilling are the most expensive items. Recent estimates of cost range from \$30-\$50 per foot for exploratory drilling to \$40-\$80 per foot for production-well drilling. These costs include drilling, coring, testing, electric logging, supervision, etc., but do not include pipelines, heat exchangers, and other hardware. The deeper the well, the higher the cost per foot. At this time, we have no idea how deep production wells may have to be drilled, but we would hazard a guess of a minimum of 3,000 feet and possibly as much as 6,000 feet. However, at this stage of planning, it is not necessary to be concerned about the details of drilling.

I would like to suggest that those persons in both the Survey and Air Force who have the decision-making responsibilities get together, help each other ask and answer the correct questions, and then design a geothermal study mutually beneficial to both parties. Dr. Christiansen will be in Mountain Home the evening of April 14. This would be an excellent opportunity for you and Colonel McWilliams to further discuss this matter.

I would be happy to answer any questions you may have on this program.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "E. G. Crosthwaite".

E. G. Crosthwaite
Hydrologist

cc: Colonel McWilliams, MHAFB
Robert Christiansen, GD, WR
Don Mabey, GD, CR
Frank Olmsted, WRD, WR