

GL01927

DEPARTMENT OF ENERGY
CASCADES DEEP GEOTHERMAL GRADIENT
DRILLING PROGRAM

OBJECTIVE:

Sponsor research to characterize
the deep hydrothermal regime of
the Cascades in order to define its
geothermal potential.

PROGRAM MANAGEMENT:

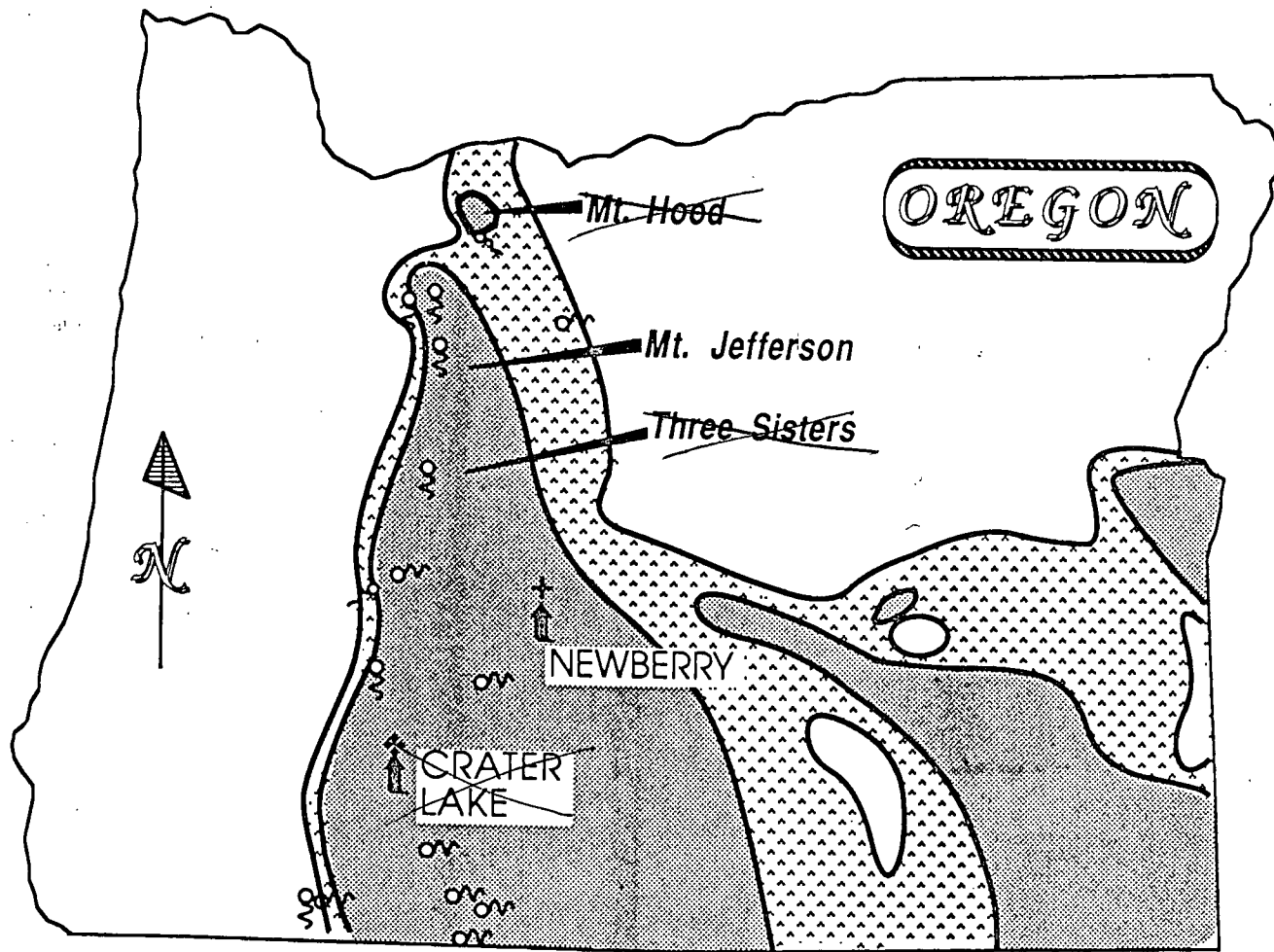
DOE/Idaho Operations Office

TECHNICAL COORDINATION:

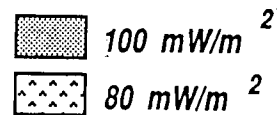
University of Utah Research Institute

MECHANISM:

Solicitations for Cost-Shared Drilling



Priest et al., 1983



CASCADES DEEP GEOTHERMAL GRADIENT DRILLING PROGRAM

TABLE #

SCIENTIFIC STUDIES

* NEWBERRY

Heat Flow - GEO and Southern Methodist

Downhole Hg - GEO

Alteration - USGS

Volcanic Stratigraphy - U of Wyoming / NSF -

Correlation of Electric Logs with Alteration - UURI

Analysis of Well Logs - UURI

electrical prop of core - UURI

* CLAKAMAS

Heat Flow - Southern Methodist

Alteration - USGS

Volcanic Stratigraphy - DOGAMI

Analysis of Well Logs - UURI

electrical prop of core - UURI

* MAZAMA

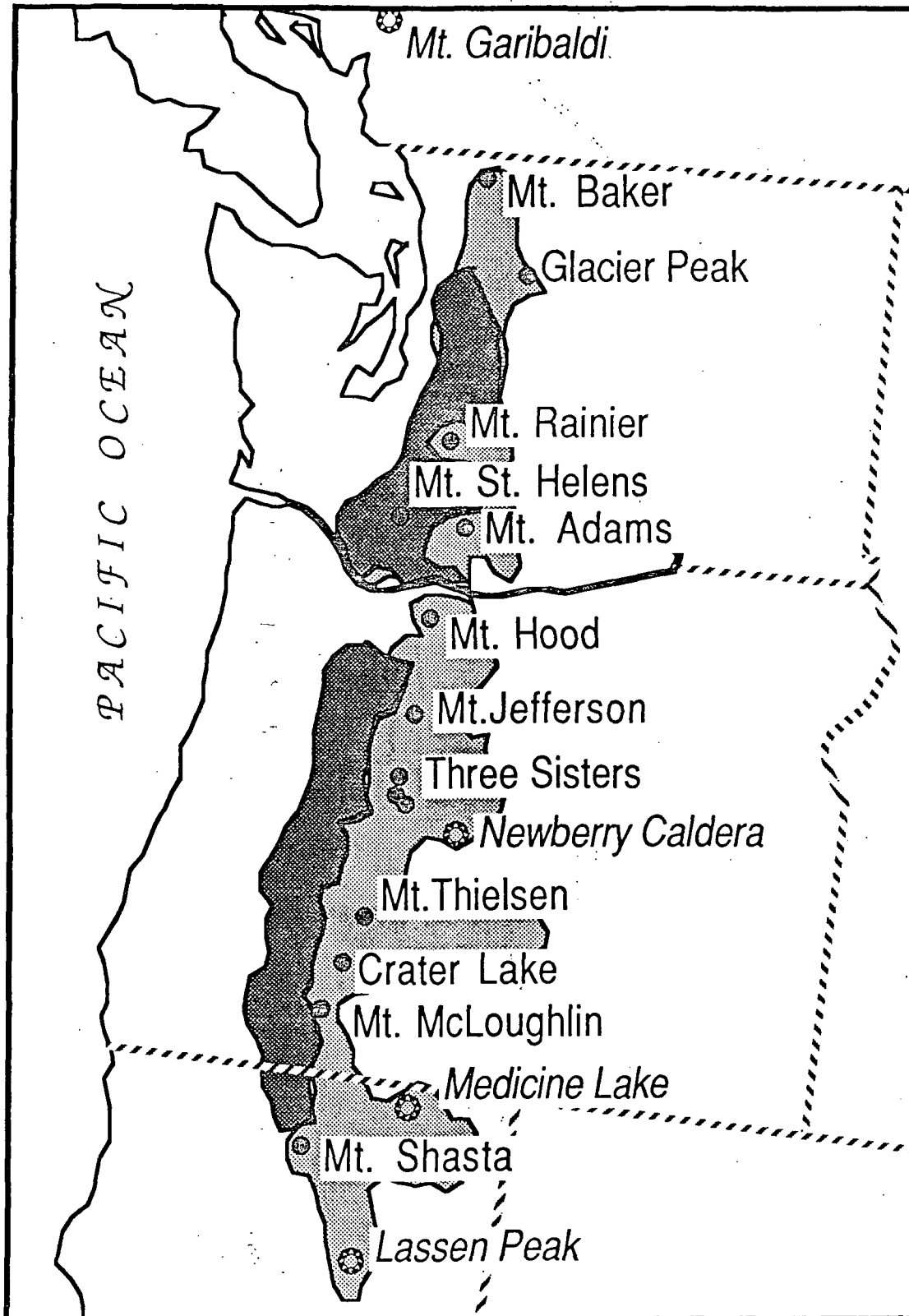
~~Heat Flow - Southern Methodist~~

~~Alteration - USGS~~

~~Volcanic Stratigraphy - UURI~~

~~Analysis of Well Logs - UURI~~

Fig. 4



☉ High Temperature Hydrothermal System

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PROGRAM ELEMENTS

Thermal Gradient Drilling

Data Acquisition

Lithology

Geophysical Well Logs

Hydrology

Surface Studies

Data Integration and Interpretation

Technology Transfer

Open File Release of Data and Core

Case Studies

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OPPORTUNITIES

- ✱ Holes available for down-hole experiments for one year
- ✱ Core stored at UURI; available for study
- ✱ Geophysical well logs and other acquired data available for study
- ✱ Correlation of surface studies with down-hole data

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STATUS

☆ **GEO Operator Corp.**

N-1 (4000') Completed 10/20/85
Data and samples open
filed by UURI Feb 86

N-3 (4000') Spud 6/1/86 - *update*

☆ **Thermal Power Company**

Clackamas (5000') Spud 6/1/86 - *update*

☆ **Blue Lake Geothermal**

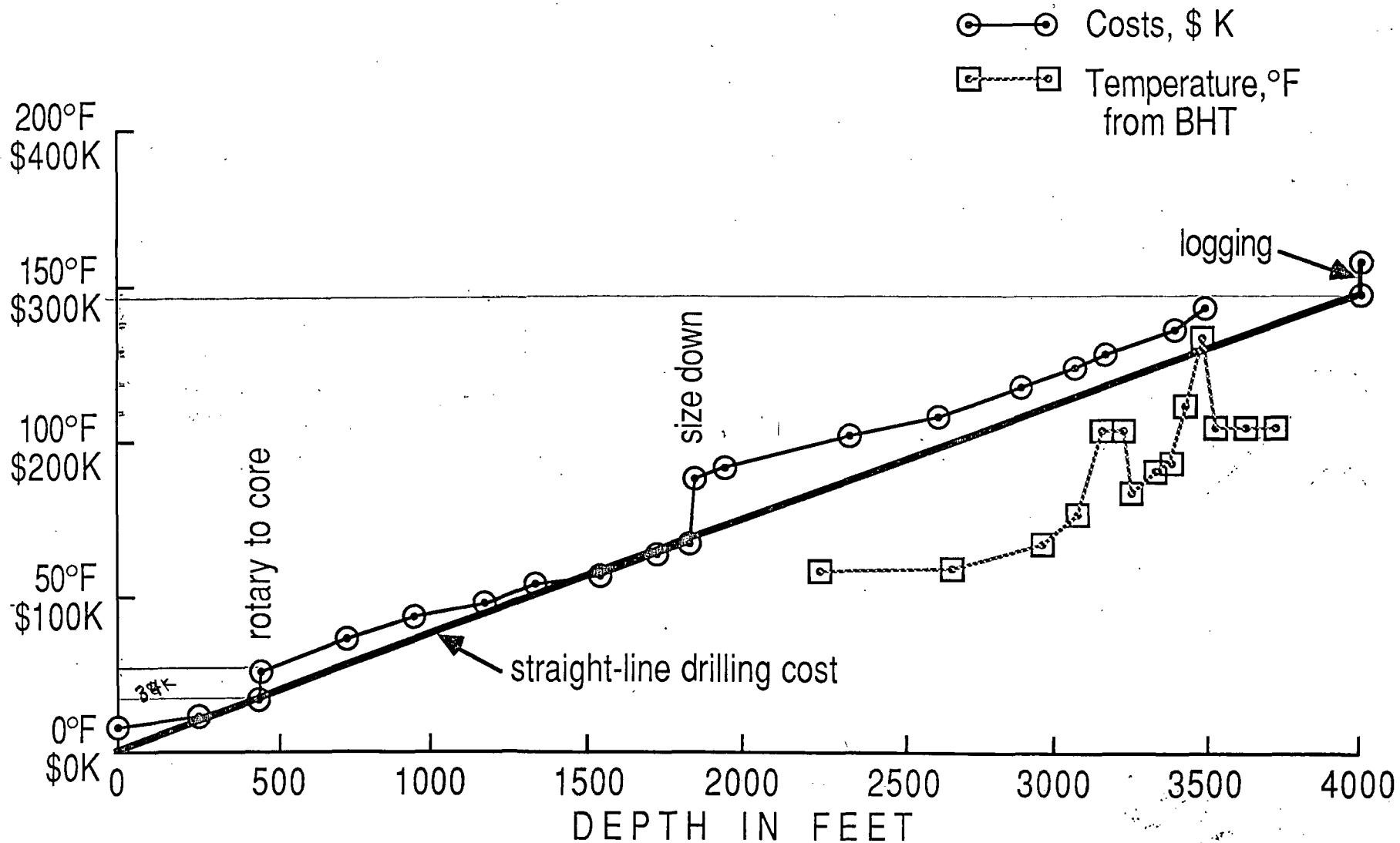
Blue Lake (4000') Spud ?

☆ **New Solicitation: May 30, 1986**

Two additional holes anticipated

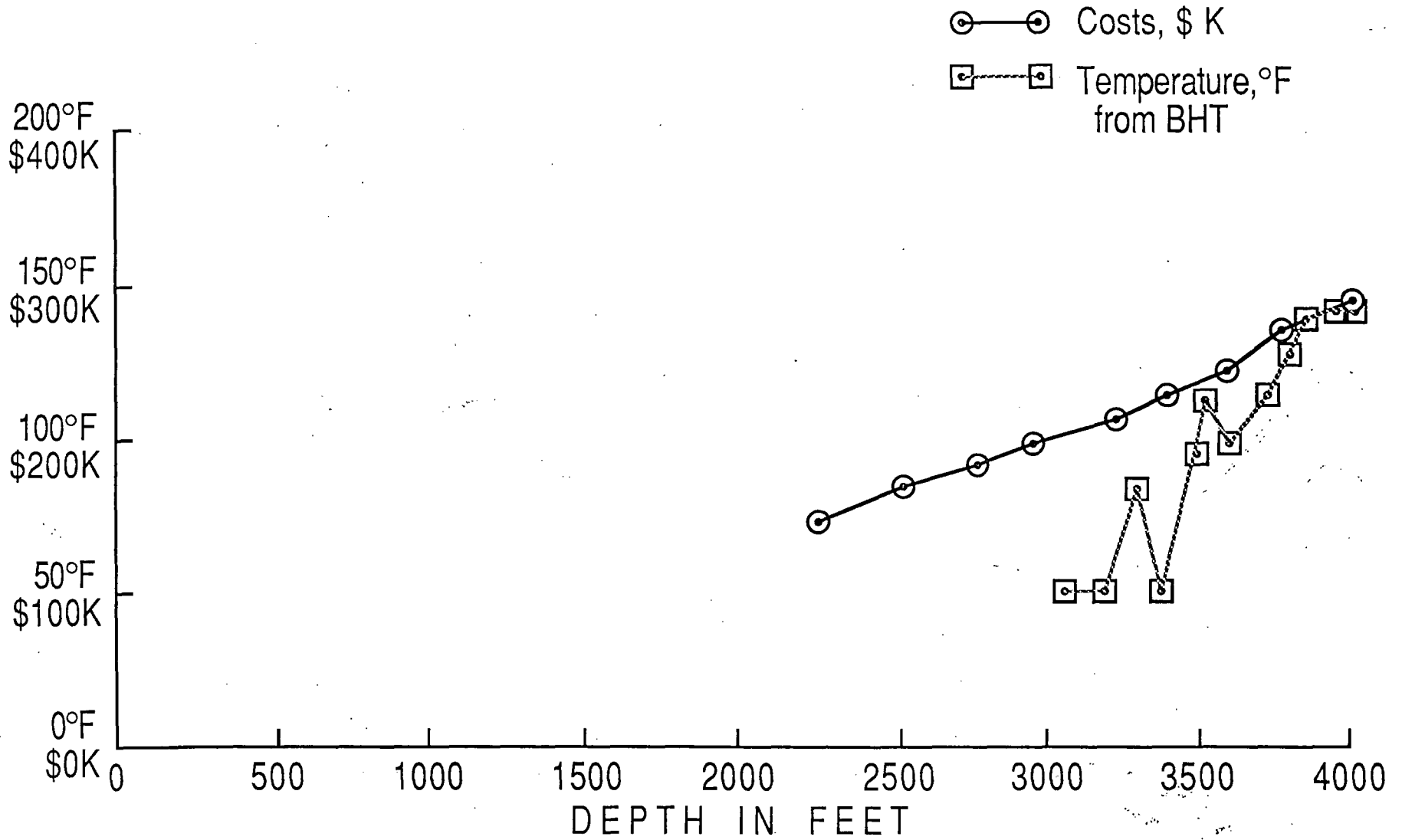
Collyer

GEO-NEWBERRY COREHOLE N-1



$$\frac{(10,390 - x)}{517} = 60$$

GEO-NEWBERRY COREHOLE N-3



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STATUS OF GEO-NEWBERRY N-3

Spud Date	6/2/86
Expected Completion (4000')	8/1-4/86
Drilling Contractor	Tonto
Core Recovery	50 - 95%
Planned Completion	1-1/2" Iron Pipe
Geophysical Well Logs Planned	Temperature, Resistivity, Caliper SP, Sonic, Gamma-Ray, Induction, Fraclog

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STATUS OF THERMAL POWER CTGH-1

Spud Date	6/8/86
Expected Completion	8/12-16/86
Drilling Contractor	Boyles Brothers
Core Recovery	90 - 100%
Planned Completion	Iron Pipe
Geophysical Well Logs Planned	Temperature, Resistivity, Caliper, SP, Sonic, Gamma-Ray, Density

CASCADES DEEP GEOTHERMAL GRADIENT DRILLING PROGRAM

STATUS OF GEO-NEWBERRY N-3

Spud Date	6/2/86
Expected Completion (4000')	8/1-4/86
Drilling Contractor	Tonto
Core Recovery	50 - 95%
Planned Completion	1-1/2" Iron Pipe
Geophysical Well Logs Planned	Temperature, Resistivity, Caliper SP, Sonic, Gamma-Ray, Induction, Fraclog

CASCADES DEEP GEOTHERMAL GRADIENT DRILLING PROGRAM

STATUS

First Solicitation (closing date 4-29-85)

GEO Operator Corp.

Two Coreholes at Newberry

N-1	4000 ft. (public data)
N-3	4002 ft.

Thermal Power Company

One Corehole near Mt. Jefferson

CTGH-1	4800 ft.
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Blue Lake Geothermal

Proposer Unable to Arrange Financing
◆◆Project Cancelled◆◆

Second Solicitation (closing date 5-30-86)

California Energy Company, Inc.

One Corehole (MZI-11A) Now Drilling
Near Crater Lake (Mazama)

TEMPERATURE - DEPTH LOG GEO N-1

