

APPENDIX A: SCOPING MATERIALS

TO: Distribution List

SUBJECT: Notice of Scoping – Geysers Power Company, LLC (Calpine)
Demonstration of an Enhanced Geothermal System at the Northwest Geysers
Geothermal Field, Sonoma County, California

The U.S. Department of Energy (DOE) is proposing to provide Congressionally Directed Federal Funding to the Geysers Power Company, LLC (Calpine) to fund the demonstration of an enhanced geothermal system at the Northwest Geysers Geothermal Field in Sonoma County, California. Pursuant to the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Parts 1021), DOE is preparing a draft Environmental Assessment (EA) to:

- Identify any adverse environmental effects that cannot be avoided should this proposed action be implemented.
- Evaluate viable alternatives to the proposed action, including a no action alternative.
- Describe the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity.
- Characterize any irreversible and irretrievable commitments of resources that would be involved should this proposed action be implemented.

Project Description

The proposed EGS project includes the injection of water into wells to enhance the permeability of an existing, high temperature, hydrothermal reservoir that will be harnessed to produce electrical energy. The purpose of the project is to establish the feasibility of stimulating the productivity of high temperature rocks by monitoring their early response to carefully designed injection tests. The project will be a collaborative effort between scientist and engineers of Calpine Corporation and the Lawrence Berkeley National Laboratory.

The proposed project includes the following phases:

- Phase I: Pre-stimulation
 - Creation of geological model
 - Analysis of existing injection-induced EGS
 - Pre-stimulation modeling of the EGS stimulation
 - Presentation of the stimulation plan
 - Reopening and conversion of two wells for deep injection back to back (known as Prati-State 31 and Prati-32) and perform the necessary wellbore modifications (i.e., open and complete the selected wells and potentially deepen the wells)

- Public Outreach and Enhanced Public Awareness of EGS Projects
- Phase II: Stimulation
 - Assessment of changes in wellbore properties
 - Evaluation and monitoring of created EGS
- Phase III: Long Term Data Collection and Monitoring

The project will use water supplied by the Santa Rosa Geysers Recharge Project via a pipeline extension of less than one mile along existing roads. The project will include reopening abandoned exploration wells on an existing pad, with access via existing roads. No new ground surface disturbance in previously undisturbed areas is proposed.

Monitoring of the EGS project will occur using Calpine's extensive existing seismic monitoring network which is now used to monitor Calpine's Santa Rosa Pipeline Monitoring Project. Four monitoring stations that are currently being developed as part of another project will also be available by the time the proposed project is implemented.

Project Location

The proposed project area is located in the northeastern portion of Sonoma County. The well locations and pipeline route are shown in Figure 1.

The project components would be located in the northwest corner of Section 35, Township 12 North, Range 9 West of the Mount Diablo Meridian. The project site is located within an undeveloped 10 square-mile area of the Northwest Geysers between the Aidlin and Ridgeline Power Plants. The proposed project would reopen and convert two existing wells: Prati State 31 and Prati 32 (PS-31, PS-32), as shown on Figure 1.

Probable Environmental Effects/Issues Scoped for the Environmental Assessment (EA)

The EA will describe all potential impacts on the environment caused by the project and will identify possible mitigation measures to reduce or eliminate those impacts. The EA will describe the potentially affected environment and the impacts that may result to:

- Air Quality
- Geology and Geothermal Resources
- Seismicity and Induced Seismicity
- Biological Resources
- Water Resources
- Noise
- Aesthetics and Visual Resources
- Human Health and Safety and Risk Assessment
- Cumulative Impacts

Development of a Reasonable Range of Alternatives

DOE is required to consider a reasonable range of alternatives to the proposed action during the environmental review. The definition of alternatives is governed by the “rule of reason.” An EA must consider a reasonable range of options that could accomplish the agency’s purpose and need and reduce environmental effects. Reasonable alternatives are those that may be feasibly carried out based on environmental, technical, and economic factors.

The No Action Alternative will be addressed. The need for project redesign, or a project alternative, will be determined during the course of environmental review.

Public Scoping/Public Meetings

This letter will be available to all interested state, local, and federal agencies to supply input on issues to be discussed in the EA. Agencies should identify the issues, within their statutory responsibilities, that should be considered in the EA. The general public is also invited to submit comments on the scope of the EA on or before **January 11th, 2010**.

DOE will offer an optional public scoping meeting or additional consultations with the public if members of the public request its necessity. Please have this request submitted no later than **December 28th, 2009** to allow for meeting planning. DOE also anticipates holding a public meeting after issuance of the Draft Environmental Assessment. Specific dates for these meetings have not been determined.

Please send your scoping meeting request and comments regarding the scope and content of the EA, along with the name and address of the appropriate contact person to:

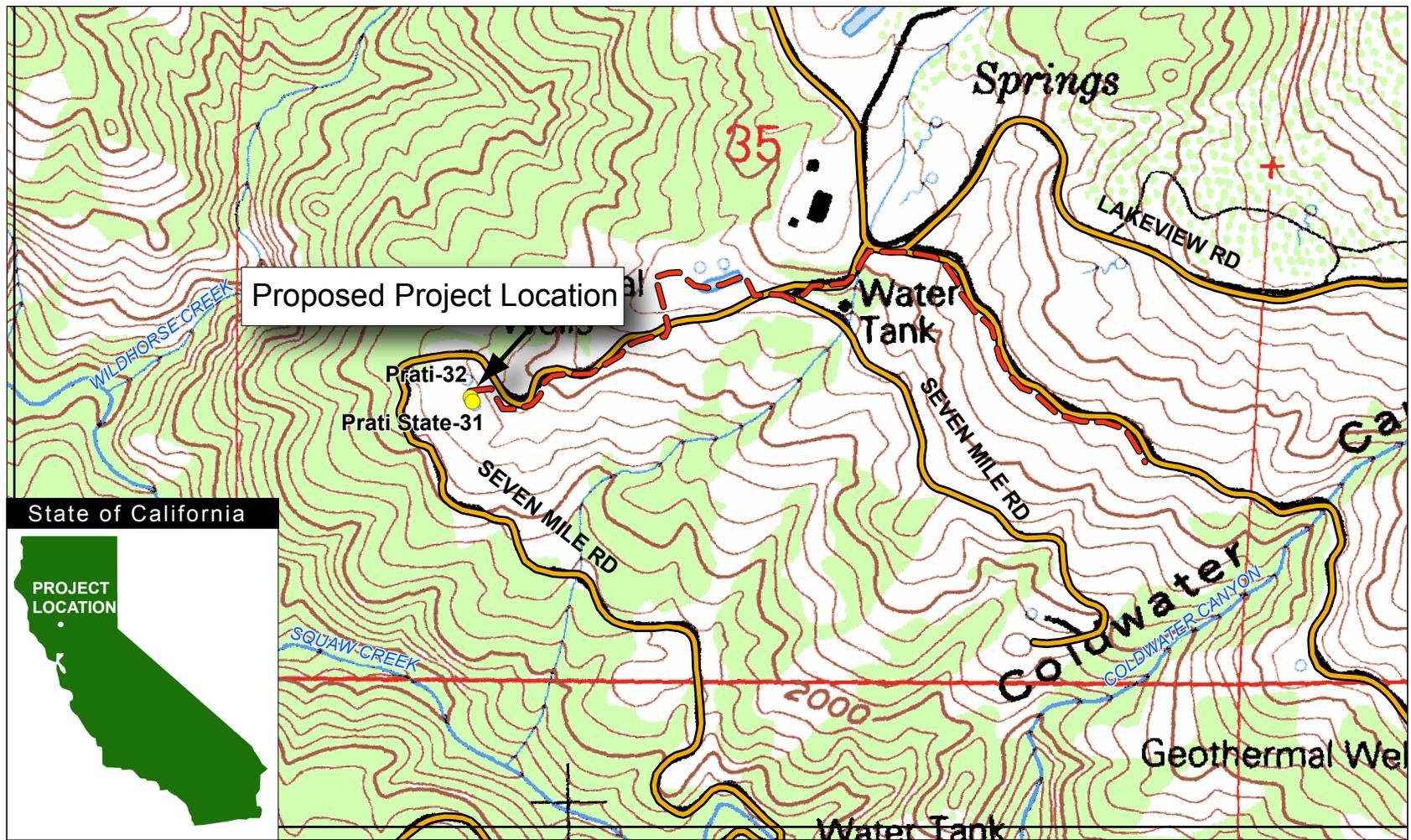
Laura Margason
Department of Energy
Golden Field Office
1617 Cole Blvd, Golden, CO 80401
laura.margason@go.doe.gov

This letter and the draft EA, when available, will be posted to the Golden Field Office electronic reading room: http://www.eere.energy.gov/golden/reading_room.aspx.

Sincerely,

Steve Blazek
NEPA Compliance Officer

Figure 1: Proposed Project Area



SOURCE: DOGGR 2009, Calpine 2009, U.S. Geological Survey, EROS Data Center, Sioux Falls, SD 2009, and RMT Inc. 2009

LEGEND

-  Pipeline
-  Project Well
-  Road





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**Environmental Assessment
Demonstration of an Enhanced Geothermal System
Northwest Geysers Geothermal Field
Sonoma County, California**

Geysers Power Company, LLC is proposing to use Congressionally Directed Federal Funding from DOE for the demonstration of an enhanced geothermal system at the Northwest Geysers Geothermal Field in Sonoma County, California. An Environmental Assessment (EA) will be prepared by DOE pursuant to the requirements of the National Environmental Policy Act (NEPA). The notice of scoping and description of the proposed project is available for review at the DOE Electronic Public Reading Room at

http://www.eere.energy.gov/golden/Reading_Room.aspx.

Public comments on the NEPA process, proposed action and alternatives, and environmental issues will be accepted until **January 4th, 2010**. Please send comments to Laura Margason, Department of Energy's Golden Field Office, 1617 Cole Blvd, Golden, CO 80401 or by email to laura.margason@goe.doe.gov.



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Appendix A: Mailing List for the Calpine EGS EA

Public, Agencies, and Interested Parties

Mr. Bruce Carlsen

Geysers Power Company, LLC
10350 Socrates Mine Road
Middletown, CA 95461

Ms. Sigrid Swendenborg

County of Sonoma Permit and Resource
Management Department
2550 Ventura Avenue
Santa Rosa, CA 95403

Mr. Ali Kahn

Department of Oil, Gas and Geothermal Resources
50 D Street
Santa Rosa, CA 95404

Mr. Guy Childs

California Regional Water Quality Control Board,
Central Valley Region
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Mr. Richard Estabrook

Bureau of Land Management
2550N. State Street
Ukiah, CA 95482

Warden Karen Maurer

California Department of Fish and Game
P.O. Box 1165
Cloverdale, CA 95425

Mr. Joe 'Dillon

NMFS
777 Sonoma Avenue, Room 325
Santa Rosa, CA 95404

Mr. Alex Saschin

Northern Sonoma County Air District
150 Matheson Street
Healdsburg, CA 95448

SCEHD, Mr. Bob Swift

Mr. David H. Oppenheimer

USGS
345 Middlefield Rd MS 977
Menlo Park, CA 94025

Mr. Dan Carlson

City of Santa Rosa
100 Santa Rosa Avenue
Santa Rosa, CA 95402

Ms. Judy Brown

State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825

Mr. Mark Dellinger

Lake County Special Districts
230-A Main Street
Lakeport, CA 95453

Mr. Jim Bybee

NMFS
777 Sonoma Avenue, Room 325
Santa Rosa, CA 95404

Mr. Gene Serafine

1061 Arlington Lane
San Jose, CA 95129

Mr. Joseph W. Aidlin

5143 Sunset Boulevard
Los Angeles, CA 90027

Ms. Nicola Ferrari Johnson

P.O. Box 1084
Cloverdale, CA 95425

Mr. Peter Flood

WHR Inc.
P.O. Box 229
Sun Valley, ID 83353

Anderson Springs Community Alliance

PO Box 884
Middletown, CA 95461

Anderson Springs Community Service District

P.O. Box 929
11401 Anderson Springs Rd
Middletown, CA 95461

Anderson Springs Homeowners Association

PO Box 43
Middletown, CA 95461-0043

Attn: Joan Clay

Anderson Springs Community Investment Fund
Committee
P.O. Box 995
Middletown, CA 95461

Attn: Robert Stark

Cobb Area Community Investment Fund
Committee
P.O. Box 540. Cobb, CA 95426

Cobb Area District Water

PO Box 284
16595 Highway 175
Cobb, CA 95426

Attn: Hamilton Hess

Friends of Cobb Mountain
PO Box 131
Cobb, CA 95426

Attn: Scott Gergus, North Coast Region

California Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403

Denise Hale Trust

945 Green Street #6
San Francisco, CA 94133-3601

M. Ali Khan

DOGGR
50 D Street, Room 300
Santa Rosa, CA 95404

Anderson Springs Community Alliance

PO Box 884
 Middletown, CA 95461

Richard Coel

Community Development Department
 255 N. Forbes St.
 Lakeport, CA 95453

Murray Grande

NCPA
 PO Box 663
 12000 Ridge Road
 Middletown, CA 95461

Rena Thiagarajan

AltaRock Energy Inc.
 2320 Marinship Way, Suite 300
 Sausalito, CA 95965

Robert Giguere

BRP Steam Holdco, LLC
 PO Box 1250
 Cobb, CA 95426

Jeff Gospe

Eric K. Hass, Branch Chief
 Geothermal Technologies Program
 U.S. DOE Golden Field Office

Native American Contacts

Eric Wilder, Chairperson

Stewarts Point Rancheria
 3535 Industrial Dr., Suite 82
 Santa Rosa ,CA 95403
 tribalofc@stewarlspointrancher

Ya-Ka-Ama

6215 Eastside Road
 Forestville , CA 95436
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Earl-Couey, Cultural Resources Manager

Mishewal-Wappo Tribe of Alexander Valley
 P.O. Box 5676
 Santa Rosa, CA95402
 ecouey.1 @netzero.net

Dawn S. Getchell

P.O. Box 53
 Jenner, CA 95450

Steve Nevarez Jr., Environmental Coordinator

Redwood Valley Rancheria of Pomo
 3260 Road I
 Redwood , CA 95470
 redwoodres@paciflc.net

Harvey Hopkins, Chairman

Dry Creek Rancheria
 Band of Pomo Indians
 Board of Directors
 190 Foss Creek Circle, Ste A
 Healdsburg, CA 95448
 PO Box 607
 Geyserville, CA 95441

**Reno Franklin, Tribal Historic Preservation
Officer**

Stewarts Point Rancheria THPO
3535 Industrial Dr. Suite 62
Santa Rosa, CA 95403

Lois Lockart, Tribal Administrator

Redwood Valley Rancheria of Pomo
3250 Road I
Redwood, CA 95470

**Lynne Rosselli, Environmental Planning
Department**

Stewarts Point Rancheria
3535 Industrial Dr. Suite 82
Santa Rosa, CA 95403

Zhao Qui, Cultural Resources Coordinator

Redwood Valley Rancheria of Pomo
3250 Road I
Redwood, CA 95470

FRIENDS OF COBB MOUNTAIN
P.O. Box 131
Cobb, CA 95426

January 11, 2010

Ms. Laura Margason
Department of Energy's Golden Field Office
1617 Cole Blvd.
Golden, CO 80401

Dear Ms. Margason:

Friends of Cobb Mountain is grateful for the opportunity to comment on the Enhanced Geothermal System project proposed by the Geysers Power Company, LLC, in the Northwest Geysers Geothermal Field in Sonoma County, California.

As we understand the proposed project, one of its objectives is to determine as closely as possible the physical conditions, mechanisms and processes involved in the induction of seismic activity by water injection into a naturally occurring geothermal reservoir. We applaud this aspect of the project, for from the standpoint of local residents closely neighboring The Geysers geothermal field this is a necessary study that is long overdue. Our decades-long experience of earthquakes in The Geysers field, which are provenly caused by geothermal operations, has brought psychological trauma, structural damage, and the recent submission of nuisance charges to the Board of Supervisors of the County of Lake, California. As long as this phenomenon continues it will inevitably invoke increasing opposition at The Geysers and elsewhere to an expanded development of geothermal energy. The elimination of the seismic phenomenon is absolutely necessary for a widespread future expansion of enhanced or engineered geothermal systems, and also by more conventional geothermal production technology.

Regarding the environmental issues pertaining to the proposed project itself, here presented as scoping issues, we are concerned with the following. The project site is on an existing pad, from which runoff must be prevented by a continuous berm around it, with rainwater and other water and drilling fluids disposed of in accordance with the regulations of the State of California Water Quality Control Board, and by the conditions of a Sonoma County Use Permit. Federal, State, and County Use Permit conditions must be observed for the handling and storage of all machine fuels and chemical materials. Local Air District rules must apply to all gaseous emissions from steam produced from the reservoir. It is stated in the project description that the water to be used will be Santa Rosa waste water. Is this absolutely the case? If additional water is used, what will be its source? Although the site is relatively remote from habitations, County noise standards must be observed for all operations for worker safety and wildlife considerations. Bonding to cover all possible damages from unexpectedly large earthquakes triggered by the project must be established and maintained for the life of the project. All earthquake data relating to the project must be accessible to the public, as well as scientific findings regarding the phenomenon of induced seismicity and its elimination or control.

Copy following by postal delivery.

Yours sincerely,

Hamilton Hess
Chair

cc: Dr. E.L Majer, Lawrence Berkeley Laboratory
Bruce Carlsen, Geysers Power Company, LLC

Sigrid Swedenborg , Geothermal Coordinator, County of Sonoma
Jeffrey D. Gospe, President, Anderson Springs Homeowners Assn.

Rec'd
11/2/09

October 30, 2009

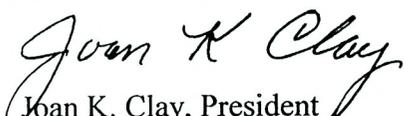
Cathy Zoi
Assistant Secretary
Energy Efficiency and Renewable Energy
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

The residents of Anderson Springs have concerns over the level of felt seismicity in our community located near the Geysers geothermal field. Recent plans by Altarock to experiment with an engineered geothermal system project at the edge of our community amplified those concerns. We appreciate that injection of water into the reservoir is necessary to sustain the output from the geothermal resource; we only request that injection be done in a responsible manner that seeks to minimize the impact to our community.

We understand that Calpine has a proposed enhanced geothermal system plan that involves moving water from their current Geysers production area, and injecting that water to the far north end of the field farther away from our community. We are encouraged by Calpine's plan which initially involves the development of the Prati 31 and 32 wells, and consider these type of projects which involve either distributing the water further from our community, or in such a fashion that lessens the impact on our community, as an example of "pro-community" geothermal development and as such, would like to offer our support for this project.

We appreciate the continuing efforts of Calpine to communicate with us on their development plans and look forward to working with them in the future to ensure both of our goals are met.

Sincerely,


Joan K. Clay, President
Anderson Springs Geothermal
Impact Mitigation Committee


Bob Marelli, President
Anderson Springs Homeowners Association


Meriel L. Medrano, Manager
Anderson Springs Community
Service District


Jeffrey D. Gospe, President
Anderson Springs Alliance

cc: Edward J. Wall
Program Manager
Office of Geothermal Technologies
Energy Efficiency & Renewable Energy
U.S. DOE
Supervisor District 1 Jim Comstock

Mike Rogers
Senior Vice President - Geothermal
Calpine Corporation