



Department of Energy

Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

April 5, 2010

District Manager: Gene Seidlitz
Bureau of Land Management, Winnemucca District Office
5100 East Winnemucca Blvd.
Winnemucca, NV 89445

SUBJECT: SAN EMIDIO GEOTHERMAL EXPLORATION ENVIRONMENTAL ASSESSMENT

Dear Mr. Seidlitz:

The U.S. Department of Energy (DOE) requests "cooperating agency" status to participate in the preparation of an Environmental Assessment (EA) for the San Emidio Geothermal Exploration Project in Washoe County, Nevada, pursuant to the Council on Environmental Quality's National Environmental Policy Act (NEPA) regulations (*see* 40 CFR 1501.6).

DOE is considering granting financial assistance to US Geothermal, Inc. for development of an EA, for geologic mapping, geophysical surveys, drilling and operations of up to two wells with associated roads. Based on a review of the Proposed Action, DOE determined that an EA must be completed prior to funding the drilling of the geothermal wells and commencing associated road construction. Therefore, DOE requests to be a cooperating agency on the San Emidio Geothermal Exploration EA, currently being prepared by your office. DOE will participate with BLM in the following:

- Providing content to BLM describing DOE's Purpose & Need and Proposed Action.
- Reviewing preliminary versions of the EA;
- Engaging in activities associated with publication of the EA;
- Reviewing portions of the EA or responding to comments regarding the EA relating specifically to drilling geothermal wells.

DOE looks forward to participating as a cooperating agency during the development of the San Emidio Geothermal EA to ensure that all relevant environmental issues are addressed. If you have any questions, please contact Christopher Carusona, Physical Scientist at (720) 356-1563.

Sincerely,

Steve Blazek
NEPA Compliance Officer



CC:

Bureau of Land Management
Mark Gingrich
5100 East Winnemucca Blvd.
Winnemucca, NV 89445

Dept. of Energy Golden Field Office
Eric Hass
1617 Cole Blvd.
Golden, CO 80401

_____ Blazek, _____ Sweeney, _____ Riel, _____ Phoebe, _____ Battershell

**SAN EMIDIO, NEVADA
THREE COMPONENT, LONG AXIS, SEISMIC SURVEY**

conducted by

**USG NEVADA LLC
and the
U.S. DEPARTMENT OF ENERGY**

PURPOSE

The U.S. Department of Energy (DOE) has awarded a grant to USG Nevada LLC (USG) to evaluate the potential for locating large fractures and productive geothermal systems by combining the results from 3 different geophysical exploration methods.

The first phase of the geophysical evaluations is to conduct a surface seismic survey utilizing geophones and a truck mounted vibroseis machine to evaluate and characterize the network and distribution of geologic fractures that exist along the east side of the San Emidio Valley. The seismic survey is a proven geophysical tool for mapping subsurface structures to a depth of several thousand feet and supports the current DOE grant.

SCOPE and METHODOLOGY

The proposed survey requires approximately 10,000 feet of above ground insulated wire and seismic receivers to be placed in an east-west line, perpendicular to the assumed fault system. (See Map) A set of three geophone receivers will be placed on the surface every 55 feet. At each geophone location a quarter inch diameter steel spike will also be inserted 2 inches into the ground so that the recorders are stable (see Attachment). No road building or surface excavation will be required for the work.

After the receivers have been installed, a rubber-tired vibroseis truck (See Attachment) will travel adjacent to the line of geophone receivers. The truck carries a steel plate that is hydraulically pressed to the ground then "vibrated" to create a "surface seismic" wave that is reflected by the geologic structure and received by the geophones. The truck will stop every 220 feet for approximately 3 minutes to obtain a GPS location and initiate a surface seismic wave. In this manner it will take one day to install each seismic line and one day to complete each seismic evaluation.

There are no wires, cables, or explosives used in the operations and there is no road building or excavation required for the project. The entire survey is expected to take less than 14 days.

SURFACE DISTURBANCE

As referenced in the methodology section above, surface disturbance is limited to one vehicle pass over the natural over the ground with no soil or vegetation removal. No excavation or road construction is required and there is no significant surface disturbance. Vehicles will be washed prior to starting the project and at the completion of operations to reduce the potential for spread of noxious or invasive plants.

RECLAMATION

During testing and as operations project staff will evaluate surface disturbances. Any significant surface disturbance can be seeded with a BLM approved seed mixture and otherwise reclaimed to promote site stabilization. No equipment will be left on site and there would be no surface occupancy.

APPENDIX C: CATEGORICAL EXEMPTIONS

1. Reintroducing endemic or native species into their historical habitats in ways that do not involve surface disturbance.
2. Maintaining, replacing or modifying existing projects, facilities, routes, or programs that do not disturb additional surface area, or historic properties; or where the ground has been previously disturbed to the extent that historic properties could not exist; or where the facility itself is not a historic property.
3. Conducting, or approving permits for, non-archaeological data collection and monitoring activities, not associated with proposed undertakings, which involve new surface disturbance less than 1 square meter. Such activities could include forage trend monitoring, stream gauges, weather gauges, research geophysical sensors, photoplots, traffic counters, animal traps, or other similar devices.
4. Classifying lands as to their cultural resource use, mineral character, vehicle use, waterpower and water storage values where the classification itself does not directly entail surface disturbance.
5. Issuing withdrawal continuations, modifications, extensions, terminations, or revocations where there would be no change in use or surface disturbance.
6. Issuing withdrawal terminations, modifications or revocations and classification cancellations and opening orders where the land would be opened to discretionary land laws and where each discretionary action would be subject to the NHPA Section 106 process.
7. Renewing existing rights-of-ways characterized by complete surface disturbance (roads, pipelines, power lines, communication sites, etc.) when no new surface disturbance is authorized.
8. Continuing Recreation and Public Purpose Act lands, small tract lands, or other land disposal classifications where the continuation conveys no additional rights.
9. Assigning land use authorization where the assignment conveys no additional rights and the assignee agrees to abide by any cultural resource stipulations in the original authorization.
10. Issuing permits and rights-of-way where no additional surface disturbance is authorized.
11. Issuing rights-of-way for overhead lines with no pole, tower, or other surface disturbance.
12. BLM easement acquisitions.
13. Installing facilities, such as, recreational, special designation, regulatory, or information signs, visitor registers, kiosks, cattle guards, gates, temporary corrals, or portable sanitation devices in previously disturbed areas outside of known historic properties.
14. Issuing or modifying regulations, orders, standards, notices, and field rules where no new surface disturbance is authorized or is not subject to NHPA review.
15. Decisions and enforcement actions (that do not involve cultural resources) to ensure compliance with laws, regulations, orders, lease stipulations, and all other requirements imposed as conditions of

4. This exemption does not apply to 3D seismic exploration projects or to any other types of multiple pass projects.

B. Hazards Abatement

1. Hazards abatement where cultural resources are not involved.

2. Authorizing or installing devices to protect human or animal life that do not involve new surface disturbance.

3. Abandoned Mine Hazard Abatement. Nevada Department of Minerals (NDOM), in cooperation with the BLM, identifies and abates mine hazards on Public Lands in Nevada. Some of these mine hazards are over 50 years in age. When the BLM and NDOM find it necessary to close or barricade mine workings that present immediate health and safety concerns, the BLM will ensure that the following measures are implemented:

a. Temporary Closures: When a temporary fence is installed to limit public access to the hazard, the BLM will:

(1) prior to installing a temporary fence, ensure inspection of the fence location by cultural resources staff or a DAT, and the fence moved, if necessary, to avoid effects on cultural resources.

(2) inform the SHPO of all temporary closures. This will include for each closure the nature of the hazard, UTM coordinates established using an appropriate global positioning system unit, a map showing the location of the fence in relation to cultural resources, and a brief description of the cultural resources involved.

b. Permanent closure of abandoned mines over 50 years old, identified on a BLM list of proposed closures for a given fiscal year, can be done without prior BLM/SHPO consultation if:

(1) Prior to any ground-disturbing activity, a qualified historical archaeologist:

(a) prepares a resource assessment of the individual mine site(s) targeted for permanent closure. The assessment must record the shafts/adits to be closed and define the historical attributes of these shafts/adits.

(b) records and conducts Class III inventory in areas from which fill will be taken and define and document the cultural attributes of this areas; and

(c) Takes 5 x 7 inch black and white photographs of the shafts/adits before and after closure. The pictures must sufficiently illustrate the construction/engineering features of each shaft/adit, artifact concentrations, as well as an overview depicting its setting within the landscape. Each photograph will be accompanied by a photo point number, a corresponding UTM location, and photo direction; and

(d) by means of a 7.5' USGS topographic map as well as global positioning system to determine and record UTM coordinates, locates and maps each

APPENDIX F: CATEGORICAL NO ADVERSE EFFECT SITUATIONS

A. Single Pass Geophysical Exploration

Single pass geophysical exploration can be a categorically determined to have no adverse effect where:

1. All traffic associated with exploration must follow routes that avoid cultural resources. Company flagging crews will identify and flag anticipated detours on the route, so that potential detours can be inventoried along with the main route.
2. The following may be excluded from cultural inventory requirements:
 - a. vibroseis and conventional truck-mounted shothole drill routes and operations located on constructed roads or well-defined existing roads and trails;
 - b. pedestrian routes and placement sites for hand-carried geophone, cables, or similar equipment;
 - c. cross-country operations of seismic trucks and support vehicles on bare frozen ground or over sufficient snow depth (vehicle traffic does not reveal the ground) so as to prevent surface disturbance;
 - d. one time (single pass) routes of wheeled vehicles under 10,000 lbs GVW;
 - e. above ground seismic blasting (Poulter method);
 - f. helicopter-supported activities, including shothole drilling and above ground seismic blasting (Poulter method) in most areas, that do not require helicopter staging area preparation and vehicle use off of roads and trails; and
 - g. exploration activities defined as casual use in 43 CFR 3150.
3. Other geophysical exploration activities that require blade work or other surface disturbing activities. These activities also involve additional direct and indirect effects for vehicle traffic. Consequently, the following situations will usually necessitate cultural inventory as determined by the Field Manager on a case-by-case basis:
 - a. cross-country vibroseis and conventional truck or OHV mounted shothole drilling operations;
 - b. surface disturbing activities associated with any geophysical technique such as blading access routes or helicopter staging areas, or disc-and-drill seeding for rehabilitation;
 - c. portions of jug truck and OHV routes, "backpack" shothole drilling, helicopter-supported activities including shothole drilling, and above ground seismic blasting (Poulter method) in areas with potential for significant fragile surface or subsurface cultural resources (dune fields, antelope traps, standing structures, etc.).