

PMC-EE2a

(20102)

U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION



RECIPIENT: University of Texas

STATE: TX

PROJECT TITLE : Novel Coupled Thermochronometric and Geochemical Investigation of Blind Geothermal Resources in Fault-Controlled Dilational Corners, Dixie Valley, Nevada

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-000522	DE-EE0005520	GFO-0005520-001	GO5520

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination

Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

B3.1 Site characterization and environmental monitoring

Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer and underground reservoir response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes); (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

B3.6 Small-scale research and development, laboratory operations, and pilot projects

Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

Rational for determination:

University of Texas (UT) would utilize DOE and cost share funds to evaluate and pin-point blind geothermal resources in dilational fault bends or stopovers by combining a novel approach of systematically integrating structural geology and fluid alteration mapping with a combination of conventional (U-Th)/He and 4He/3He thermochronometry in conjunction with soil-gas surveys. Laboratory work would be conducted at the Department of Geological Sciences at the University of Texas at Austin. Field work associated with this project would occur in the Stillwater-Dixie Valley area of western Nevada.

Project Tasks:

1. Geological Investigations
 - 1.1. Structural and Kinematic Study – Geographic Information systems (GIS)-based digital field computer mapping
 - 1.2. Fluid-Rock Interactions and Alteration Study – fluid alteration zones would be mapped and sampled for mineralogical and geochemical analysis
2. Thermochronometric Investigations

- 2.1. Conventional (U-Th)/He Thermochronometric Study – samples would be collected along the range front with a spacing of approximately one to two kilometers. Additional samples would be collected with elevation increases.
- 2.2. Novel 4He/3He Thermochronometric Study
3. Soil Gas Survey – soil CO₂ fluxes would be measured using a portable "accumulation chamber" instrument consisting of a backpack-mounted CO₂ analyzer and an open-bottomed chamber. The survey would be conducted on foot.
4. Data Integration
5. Project Management and Reporting

Field work for the project may occur on BLM administered lands in western Nevada and would therefore require approval from BLM (probably by either a "casual use" determination or an approved NOI) before beginning field work activities.

According to the R&D laboratory questionnaire, all permits for laboratory work are in place and no additional permits are needed for project activities. All facilities, equipment, analytical procedures and chemicals used, and safety protocols are reviewed, approved, regulated, and monitored by UT Environmental Health and Safety (UT EH&S). There would be no air pollutants produced from this work during project activities. Liquid and toxic waste generated by the mass spectrometer would be disposed of by UT EH&S according to state and federal regulations.

Project Budget: \$700,278 (DOE) \$0 (cost share)

This project comprises information gathering, analysis, and dissemination; site characterization and environmental monitoring; and laboratory operations; therefore the DOE has categorized this into Categorical Exclusions A9, B3.1, and B3.6.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Insert the following language in the award:

You are required to:

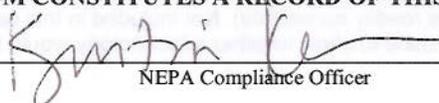
If project field work would occur on BLM administered lands, UT must provide DOE copies of the BLM permits/approvals for that project field work prior to the commencement of those activities.

Note to Specialist :

EF2a prepared by Casey Strickland

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____


NEPA Compliance Officer

Date: _____

12/21/2011

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :