

PMC-EF2a

(2.04602)

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



RECIPIENT: Stanford University

STATE: CA

PROJECT TITLE : Characterizing fracture properties using resistivity measured at different

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000522	DE-EE0005516	GFO-0005516-002	EE55

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.)

B3.6 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:

Stanford University would utilize DOE and cost share funds to evaluate and verify the concept of identifying the nature of fractures (major fractures vs. microfractures) using resistivity measurements at different frequencies. The research would be conducted in the laboratories of the Stanford Geothermal Program, Green Earth Science Building, 367 Panama Street, Stanford University, CA 94305.

This project includes two Phases. Phase I of the project was previously approved by GFO-0005516-001 on November 29, 2011. Prior to initiating Phase II activities, there was a go/no-go decision and the project was given a "go" decision to move into Phase II activities. This NEPA review is for the remainder of the proposed project activities (Phase II).

Phase II – Prototyping

Task 2.0 Fracture Detection and Analysis – measurements will be taken of the resistivity in rocks with fractures of different apertures, different length, and different configurations at different frequencies. Stanford would then develop mathematical models and investigate the methodology developed in Phase I (Multi-Frequency Electrical Resistivity Tomography). Stanford would then use the measured resistivity data to infer the fracture properties.

There is no fieldwork associated with Phase II of this project.

Based on review of the project information, DOE has determined that the remaining proposed project activities in Phase II would not have a significant individual or cumulative impact to human health and/or the environment. DOE has determined the proposed activities are consistent with actions contained in DOE categorical exclusions A9 "information gathering, analysis, and dissemination," and B3.6 "laboratory operations," and is categorically excluded from further NEPA review.

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.

Note to Specialist :

Casey Strickland 4/1/13

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Date: 4/8/2013
NEPA Compliance Officer

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 :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager