

PMC-EF2a

(2.04.02)

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



RECIPIENT: Colorado School of Mines

STATE: CO

PROJECT TITLE : Joint Inversion of Electrical and Seismic data for Fracture Characterization and Imaging of Fluid Flow in Geothermal Systems

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-PS36-08GO98008	DE-FG36-08GO18195	GFO-GO18195-002	0

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 (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.
- B3.1** Onsite and offsite site characterization and environmental monitoring, including siting, construction (or modification), operation, and dismantlement or closing (abandonment) 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. Activities covered include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. Specific activities include, but are not limited to:

Rational for determination:

Colorado School of Mines (CSM) would utilize DOE funds to conduct a geophysical characterization of the Mount Princeton geothermal system in the Upper Rio Grande Rift Basin in Colorado (Phases 1 & 2) and the Neal Hot Springs area in Oregon (Phase 3). Phase 1 & 2 of the present SOPO (Mount Princeton geothermal system in Colorado) were previously approved by GFO-09-093 on February 26, 2009 and the work has subsequently been completed by CSM. This determination is specific to Phase 3 work occurring in the Neal Hot Springs area in Oregon.

Phase 3 consists of the following tasks:

1. Survey Planning and Permitting
2. High resolution Seismic Methods
 - 2.1. 3-D seismic experiment – 9 component 3-D seismic volumes would be gathered utilizing a vibratory source. Work is expected to extend over two field seasons.
 - 2.2. 2-D seismic profiling – seismic profiles would be gathered across each proposed 3-D volume utilizing vibroseis trucks.
 - 2.3. Passive Seismic monitoring utilizing three-component seismographs
 - 2.4. Processing and Interpretation of the three types of seismic data recorded in 2.1, 2.2, and 2.3.
3. High resolution Vertical Seismic Profiling (VSP) – data would be collected at a US Geothermal site utilizing a vibratory source.
4. Tomography of ground water flow from self-potential data
5. Reporting and Public Outreach

High resolution seismic work would be conducted along existing right-of-ways and county roads. Any permits required for the work would be obtained from the authorizing agency. VSP work would occur in an existing US Geothermal well and the vibratory source would be on the existing well pad. No new surface disturbance is expected to occur as a result of the project.

This project is comprised of information gathering, data analysis, and document preparation; and onsite geological and geophysical surveys. The DOE has categorized this proposal into Categorical Exclusions A9 and B3.1.

NEPA PROVISION

DOE has made a final NEPA determination for this award.

Insert the following language in the award:

Note to Specialist :

EF2a prepared by Casey Strickland

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: *Kymon Lee*
NEPA Compliance Officer

Date: 4/12/2011

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 :

Field Office Manager's Signature: _____
Field Office Manager

Date: _____