

PMC-ND
(1.08.09.13)

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: University of Hawaii at Manoa

STATE: HI

PROJECT TITLE : Comprehensive analysis of Hawaii's geothermal potential through Play Fairway integration of geophysical, geochemical, and geological data

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000841	DE-EE0006729	GFO-0006729-004	GO6729

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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the University of Hawaii to address the overarching theme of uncertainty quantification and reduction for geothermal exploration, specifically through the development of Geothermal Play Fairways. A play fairway analysis defines levels of uncertainty with respect to the presence and utility of geothermal system elements, and translates them into maps to high grade the geographic area over which the most favorable combinations of heat, permeability, and fluid are thought to extend. Previous NEPA Determinations (GFO-FOA0000841-001, GFO-0006729-002, and GFO-0006729-003) reviewed Budget Periods (BP) 1 and 2 of the project. This NEPA review is for BP3 activities.

University of Hawaii project activities in BP3 would be for the collection of scientific data from a well that is being drilled on Lāna'i separate from this DOE project. The Lāna'i drilling activity is being completed by a private entity (Pūlama Lāna'i) that is responsible for the drilling of the well and all associated permitting and regulatory process activities. The well would be drilled regardless of the scientific data collection activities proposed in this award, therefore drilling activities are not considered a connected action to the DOE project and will not be reviewed as part of this award.

The specific data collection activities proposed in this DOE project would include: collect and analyze four sections of

drill core, conduct geophysical logging, collect and analyze fluid samples, and perform injection testing of the well. Additionally, the project would also improve, and where possible validate, the probability and confidence maps that were an output of BP2 activities. Geophysical logging of the well would include downhole resistivity, temperature, and other relevant surveys (e.g. acoustic, televiwer, natural gamma) if funds allow. Fluid samples would be obtained after each phase of drilling and after drilling fluid has been cleared by the drilling company with samples sent to laboratories for analysis. Flow testing would involve pumping water into the borehole while running a spinner flowmeter in the well. No ground disturbing activities would be required and no change in the use of any facility would result from project data collection activities. No modifications to permits or new permits, additional licenses and/or authorizations would be necessary for proposed project activities. No waste would be generated as a result of the proposed project activities. Recovery of scientific data during drilling activities would involve working in the vicinity of the drill rig during operations. All operations at the drilling site would be conducted under the supervision of an experienced drilling supervisor. All project workers would be required to wear appropriate personal protective equipment at all times when working on the rig and support equipment, and would obtain safety training regarding proper technique for heavy lifting and use of needed equipment. DOE does not anticipate any impacts to resources of concern due to the proposed activities of the DOE project.

Based on the review of the proposal, DOE has determined BP3 activities fit within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410 (2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. All tasks in BP3 are 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 the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

Geothermal Technologies Office
This NEPA determination does not require a tailored NEPA provision.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Casey Strickland Date: 8/15/2017
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