

PMC-ND
(1.08.09.15)

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



RECIPIENT:Baker Hughes

STATE: TX

PROJECT TITLE : Directional Measurement-While-Drilling System for Geothermal Applications

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000522	DE-EE0005505	GFO-0005505-002	GO5505

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.
- B3.11 Outdoor tests and experiments on materials and equipment components** Outdoor tests and experiments for the development, quality assurance, or reliability of materials and equipment (including, but not limited to, weapon system components) under controlled conditions. Covered actions include, but are not limited to, burn tests (such as tests of electric cable fire resistance or the combustion characteristics of fuels), impact tests (such as pneumatic ejector tests using earthen embankments or concrete slabs designated and routinely used for that purpose), or drop, puncture, water-immersion, or thermal tests. Covered actions would not involve source, special nuclear, or byproduct materials, except encapsulated sources manufactured to applicable standards that contain source, special nuclear, or byproduct materials may be used for nondestructive actions such as detector/sensor development and testing and first responder field training.

Rationale for determination:

DOE is proposing to provide funding to Baker Hughes Oilfield Operations (Baker Hughes) to develop geothermal-specific drilling technology for measuring downhole with a transmitter, power system, electronics, and navigation system. A NEPA determination for Phase 1 of this project (GFO-0005505-001) was signed on December 15, 2011. Baker Hughes passed a Go/No-Go decision to move into Phase 2. This NEPA determination applies to Phase 2, except for the proposed field testing activities.

Design, manufacturing, and testing activities for the Measurement-While-Drilling (MWD) system in Phase 2 would occur at existing Baker Hughes facilities in Texas and Germany. The MWD system would also be tested under drilling conditions at the Baker Hughes Experimental Test Area in Oklahoma. This test facility is specifically designed and permitted for testing, research and development, or training activities of this type. No new permits or authorizations would be needed for any of the proposed Phase 2 activities that would occur at the laboratory facilities or test site. Commercial testing of the MWD system is also planned in Phase 2 for Sub Task 8.3 but the location for that testing has yet to be determined at this time. If the project reaches the point where commercial testing is viable, additional NEPA review will be required once the commercial test site has been determined.

Based on review of the project information, DOE has determined that the Phase 2 activities (excluding Sub Task 8.3) would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined that these activities are consistent with actions contained in DOE categorical exclusions A9 "Information gathering, analysis, and dissemination," B3.6 "Small-scale research and development, laboratory operations, and pilot projects," and B3.11 "Outdoor tests and experiments on materials and equipment components," and are categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

Sub Task 8.3 Field Testing in Commercial Well

This restriction does not preclude you from:

Phase 1

Phase 2 (excluding Sub Task 8.3)

If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are 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 require a tailored NEPA provision.

Casey Strickland 12/11/14

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Date: 12/22/2014
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