

PMC-ND

(1.08.09.13)

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

**RECIPIENT:**Pagosa Verde, LLC**STATE:** CO

PROJECT TITLE : Recovery Act: Direct Confirmation of Commercial Geothermal Resources in Colorado using Remote Sensing and On-Site Exploration, Testing and Analysis

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0002828	GFO-0002828-005	GO2828

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 funding to Pagosa Verde LLC (Pagosa) to collect and compile geothermal resource data and analyses of an exploration area at Pagosa Springs, Colorado in anticipation of developing a geothermal resource. This award (DE-EE0002828) was transferred from Flint Geothermal LLC (Flint) to Pagosa as an award novation. Two previous NEPA Determinations (GFO-0002828-001 and -002) were completed in 2010 and 2011 for the project when it was with Flint Geothermal (now listed in the uploaded SOPO as Phase I A). A third NEPA Determination was completed on June 11, 2014 (GFO-0002828-003) for Pagosa's activities in Phase I B and Phase III. A fourth NEPA Determination was completed on October 8, 2014 (GFO-0002828-004) for temperature gradient (TG) wells and geophysical testing in Phase II. After this drilling program, the SOPO was modified to include work that would occur to the northwest of Pagosa Springs and the task and Phase structure of the SOPO was heavily modified. The revised SOPO has moved all previously completed work that has already been approved by previous NEPA Determinations into a Phase IA and Phase IB. Phase II is now the additional TG drilling to the northwest of Pagosa Springs and Phase III is exploration well drilling. Data analysis, report writing, and data submittal are now listed as Task 8 and 9. These two tasks are applicable to all Phases. This NEPA Determination is specific to the TG well drilling to the northwest of Pagosa Springs and associated activities as outlined in the new Phase II as well as the new Tasks 8 and 9. Further NEPA review will be required for exploration well drilling in Phase III if the TG wells indicate further exploration well drilling is needed and those exploration wells are sited.

In Phase II, Pagosa is proposing to drill three shallow TG wells ranging from depths of 300 to 500 feet to the northwest of Pagosa Springs, Colorado. Access to the drill sites would be by paved roads. A temporary use area (TUA) of 100 feet by 100 feet would be established around each TG well that would be used for laydown, drill cutting collection, and water catchment. All drill sites are on paved locations and all activities would occur within paved areas. Drilling best management practices would be followed by the driller and all required State permits would be acquired prior to beginning work. None of the locations or proposed activities would have effects on wetland areas. No other resources of concern beyond those discussed below were found during the NEPA review. Specific details of the project locations with detailed maps of the site layouts can be found in the uploaded document PV_NW_Observation_Hole_Location_Review_20150518.pdf.

According to the United States Fish and Wildlife Service (USFWS), there are 11 species listed as threatened, endangered, candidate, or proposed with potential to occur in Archuleta County, Colorado. Of these 11 species, nine were assigned a "no effect" or equivalent determination due to the lack of suitable habitat in the proposed project area or the lack of project impacts to potential habitat in the area. The proposed project area for Phase II activities does contain habitat for both the endangered Pagosa skyrocket and the endangered New Mexico Meadow Jumping Mouse. A preliminary review of possible locations was completed to look for sites where the TUA and all associated activities would be outside of a 300 meter buffer from critical habitat, potential habitat, or known Pagosa skyrocket plants (determined by previous surveys), and were not near potential jumping mouse habitat. This 300 meter buffer would provide an adequate distance to ensure there would be no dust related effects to pollinators. None of the drill locations are near potential jumping mouse habitat. The three sites are not within 300 meters of critical habitat or any known Pagosa skyrocket plants but is within 300 meters of potential Pagosa skyrocket habitat as determined by soil/geology types in which plants have been found to occur (OH-17: 295 meters, OH-1: 65 meters, OH-18: 125 meters). However, all proposed activities would occur on paved areas so little or no dust is anticipated to occur and there is a significant barrier to pollinators in the form of a multi-lane highway between the proposed TUAs and the potential habitat (soils). Based on this analysis, DOE has determined that the proposed drilling at these three locations would have "no effect" to the Pagosa skyrocket and its designated critical habitat or to the New Mexico Meadow Jumping Mouse and would not modify proposed critical habitat for the New Mexico Meadow Jumping Mouse. The information gained from these wells may be used to site and plan future geothermal exploration and confirmation wells in the area. If this occurs and there is DOE involvement, additional consultation with USFWS will be initiated at that time.

Based on review of the project information, DOE has determined that Phase II activities would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined that Phase II, Task 8, and Task 9 activities are consistent with actions contained in DOE categorical exclusions A9 "Information gathering, analysis, and dissemination," and B3.1 "Site characterization and environmental monitoring," 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/NSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

Phase III

This restriction does not preclude you from:

All tasks other than Phase III

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.

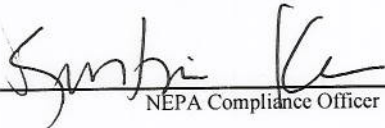
Note to Specialist :

This NEPA Determination does require a tailored NEPA provision.

Geothermal Technologies Office

Casey Strickland 05/29/15

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: 
NEPA Compliance Officer

Date: 5/29/2015

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: _____