

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



RECIPIENT: NREL

STATE: CO

PROJECT TITLE: NREL-24-001b Federal Geothermal Technical Assistance Phase 2

Notice of Funding Opportunity Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	GFO-NREL-24-001b	GO28308

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), 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.)

A11 Technical advice and assistance to organizations

Technical advice and planning assistance to international, national, state, and local organizations.

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's (DOE) National Renewable Energy Laboratory (NREL) is proposing to provide technical assistance to the Federal Geothermal Partnerships Initiative (FedGeo). The purpose of FedGeo is to help expand geothermal heating and cooling technology at federal sites nationwide. For the proposed project, NREL would provide support at two locations, the Mike Mansfield Federal Building in Butte, Montana, and Fort Eisenhower in Augusta, Georgia.

The FedGeo Initiative involves two phases. The first phase has been reviewed previously (NREL-24-001, "Install of a test vertical borehole ground heat exchangers at West Point and Detroit Arsenal"). Phase 1 involved drilling of vertical boreholes and subsequent subsurface characterization activities to verify the thermal and hydrogeological conditions of the project locations. Phase 2, which is the subject of this review, is now being proposed and involves the expansion of this research at two additional locations.

A description of the proposed Phase 2 activities to occur at each location is described below.

In Butte, Montana, The U.S. General Services Administration (GSA) has obtained funding for the project and is currently in the preliminary design phase. University of Wisconsin-Madison staff (NREL subcontractor) would provide support for modernization of the Mike Mansfield Federal Building, with the goal of repurposing a nearby abandoned mineshaft for a geothermal heat exchange system. The subcontractor would coordinate with Montana Tech and Butte Silver Bow to conduct a structural assessment of the mineshaft concrete cap. Site characterization work would involve drilling an 8-inch hole on the mine's cap and lowering instrumentation into the mineshaft; installing monitoring equipment; and/or using down-shaft sensors and a new heat injection technique to identify locations of subsurface water flow. The instruments would be installed to be semi-permanent within the mine and would include coordination with all appropriate partners.

At Fort Eisenhower, the NREL subcontractor would design and document a potential field monitoring program for the existing geothermal exchange fields. Program development would attempt to define parameters of groundwater flow and characterize the groundwater impact on the performance of a subsurface heat exchanger.

Proposed project activities would begin in the summer of 2025.

Impacts

The USFWS's IPaC tool was used to determine if any threatened and endangered species are present at the Butte, Montana location. At the Mike Mansfield Federal building, there is one (1) proposed endangered species, three (3) threatened species, and thirteen (13) migratory birds. There is no critical habitat at this location.

All work would be performed in areas that are developed and underground within the mineshaft.

No construction or ground disturbing activities would be conducted at Fort Eisenhower.

For the above reasons, DOE has determined that the proposed project would have no effect on threatened and endangered species at either location.

Air emissions resulting from vehicles and equipment operation at or in the mine would be de minimis. Noise would be emitted during the brief drilling on the mineshaft concrete cap, but the noise would be temporary and would not impact sensitive receptors.

Individuals working on this project could be exposed to physical and electrical hazards. Existing corporate health and safety policies and procedures would be followed including employee training, proper protective equipment, engineering controls, and monitoring. Additional policies and procedures would be implemented as necessary if new health and safety risks are identified.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

All required permissions shall be obtained prior to commencing project activities.

Notes:

NREL

Brandon Bammel, 06/18/2025

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such

that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



Electronically
Signed By: **Nicole Serio**

NEPA Compliance Officer

Date: 6/20/2025

FIELD OFFICE MANAGER DETERMINATION

- ☒ Field Office Manager review not required
☐ Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____

Field Office Manager

Date: _____