PMC-EF2a
(2.04.02)

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

RECIPIENT: Governor's Energy Office **STATE:** CO

PROJECT TITLE : COLORADO SEP ARRA - City of Aspen, Geothermal Power Feasibility Study

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DEFOA0000052	DE-EE0000082	GFO-0000082-010	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.

A11 Technical advice and planning assistance to international, national, state, and local organizations.

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:

The City of Aspen is proposing to use $50,000 in SEP funding for a feasibility study, which includes the drilling of one test well (1 new temperature gradient borehole) and evaluate the geothermal power production potential beneath the City of Aspen, CO, and preparation of a final report. The goal of this work will be to guide the City in its future geothermal water rights appropriations and development of sustainable geothermal power production.

The project goal is to define the geothermal gradient, approximate yield, and quality of ground water in the Leadville Limestone formation (aquifer) beneath the City of Aspen, Colorado for the purpose of developing the geothermal resources in the formation for beneficial use in the City. This will be accomplished by drilling a single 800 feet to 1,200 feet deep test well into the geothermal aquifer. Two alternative test drilling sites are proposed, both of which would occur in Herron Park, a city park which is currently a maintained, mowed grass and treed area adjacent to the Roaring Fork River and downtown Aspen. Herron Park was selected because the Leadville Limestone formation becomes shallower the further east it runs; therefore drilling in this location will require a shallower drill depth. All drilling, well construction, and plugging and abandonment work will be conducted by a licensed driller. Drilling fluids and drill cuttings will not be discharged into any streams, but will be contained within the drill site disturbance area. Hydraulic fracturing of the aquifer will not be done and is not allowed under the rules of the State Engineer. As required, spent drilling fluids and drill cuttings may be buried on site in a pit, or hauled to an approved disposal site as directed by the City.
On July 14, 2011 a public meeting regarding the project was presented at the City's Open Space and Trails Board. The Board voted unanimously in support of the project. The City also held a "neighborhood meeting" and invited 188 members of the public to attend. Twelve residents attended the meeting and expressed concern or raised questions regarding noise and any costs to taxpayers, and one resident expressing disapproval for any drilling projects near her home. However, the general response to the project has either been supportive or indifferent.

Herron Park is surrounded by residential and light commercial areas. Ground disturbance will be minimal and no adverse effects to threatened and endangered species or wetlands are expected as a result of the proposed project as these resources are not present at the project site. The drilling will last approximately 30 to 45 days and the noise from the drilling will be kept at or below 55 decibels, as required by city ordinance.

Colorado DOW has been consulted and determined that conducting a test/borehole for potential geothermal should not have any negative impacts to wildlife as long as the drill site selected does not disturb or damage the riparian habitat along the river. DOE has reviewed the DOW determination and is in concurrence with the proposed recommendations for minimizing impact. This city has submitted a letter of assurance to follow DOW recommendations for minimizing riparian zone impacts.

Herron Park is not listed on the inventory of historic landmark sites and structures in Aspen; and therefore is not under the purview of the Historic Preservation Commission. Negative impacts to cultural resources are not expected as a result of the proposed project.

The Roaring Fork alluvial aquifer will likely be drilled using a caisson rig and cased with steel casing and cement grout to protect this important resource. Drilling will then penetrate through the underlying Belden Shale formation and the upper to middle portion of the Leadville Formation. The Belden Shale will likely be cased and cemented. The Leadville Formation will be completed and developed as a 6-inch diameter open hole taking advantage of the formation's inherent stability.

A geothermal water right application was filed with the Water Court to appropriate geothermal ground water found in the Leadville Formation and in the underlying rock formations for beneficial use. To construct the test/observation well, a simple monitoring/observation well permit must be obtained from the Colorado State Engineer. This permit can be obtained without a water right decree, is valid for one year, and can be easily converted to a monitoring well permit. Any temporary discharge of water from the test well (such as during air-lift testing) may require an NPDES discharge permit issued by the Colorado Department of Public Health and Environment.

The project test site is located outside of a FEMA mapped 100 year floodplain and therefore will not negatively impact base flood elevations. A flood map and letter from the Aspen's certified floodplain manager affirms the project location as being outside of the 100yr floodplain.

DOE has determined that this proposed project consists of drilling a well for sampling/monitoring/characterization of a groundwater resource; data analysis, and technical/planning assistance. DOE has determined that the proposed project is categorically excluded from further NEPA review under CX A9, A11, and B3.1(c)

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

Completed by Melissa Rossiter

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 8/3/11

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