

PMC-EF2a

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



RECIPIENT: PUD #1 of Snohomish County

STATE: WA

PROJECT TITLE : Geothermal Energy Exploration Study

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
CDP	DE-EE0000325	GFO-10-411-001	325

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.
- 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:
- B3.7** Siting, construction, and operation of new infill exploratory and experimental (test) oil, gas, and geothermal wells, which are to be drilled in a geological formation that has existing operating wells.

Rational for determination:

Snohomish County Public Utility District (PUD) from Washington State proposes to use DOE and cost share funding to develop and demonstrate geothermal resource in the King and Snohomish counties. In Tasks 1 through 3, PUD would characterize the initial state of the geothermal reservoir, acquire permits and surveys, and develop a communications outreach plan (authorized June 17, 2010; GFO-10-411). For this review, the DOE is evaluating Tasks 4 through 7 (drilling, evaluation, reporting) in this NEPA determination.

Task 4) Exploration wells (5) site preparation and drilling

Subtask 4.1) Exploration site preparation: Conduct all necessary site preparation for drilling activities (e.g., drill pad preparation).

Subtask 4.2) Drilling of exploration wells: Drill up to five exploration geothermal gradient wells, approximately 700 feet deep.

Table 1. Location details of proposed locations for temperature gradient holes

Proposed site DNR 26-1 is located on land owned by Washington State and managed by the Department of Natural Resources (DNR). The District has worked with DNR representatives in identifying the likely locations for this hole. Proposed site 26-1 is located in a compacted clearing adjacent to a fill site where the Washington State Department of Transportation deposits excess rock material. As part of early exploration for geothermal energy, a licensed drilling contractor would drill geothermal temperature gradient boreholes 700 feet in depth and approximately 6 inches in diameter at 5 proposed locations in King and Snohomish Counties. Tubing would be installed in the holes to total depth and be filled with water from a municipal water system. Technicians would return to the holes three to four times over the following year to measure temperature at depth. At the end of the monitoring period, the holes would be plugged and abandoned in accordance with Washington State regulations as set out in WAC 332-17-310. A copy of the drilling program would be provided to the drilling contractor.

Sites FS 1 and FS 2 are located on USFS land. Proposed site FS 1 is located in the equipment staging area for a rock quarry used by the USFS to produce gravel. Proposed site FS 2 is located in a roadside clearing atop a fill pile on the edge of land identified for a planned timber sale.

Proposed site Garland is located near Garland Mineral Springs in Snohomish County. Drilling would occur within the bed of the access road to a privately owned site for which the District has negotiated a lease which is located in the PMC record.

Proposed site YC-1 is located in the project area of Snohomish County PUD's Young's Creek hydroelectric project, which is already cleared for development.

The equipment used to drill the holes would be a truck-mounted dual air rotary drill. No construction is needed for drilling or access. Minimal surface disturbance is expected; an above-ground fluids sump may be constructed using

weed-free hay bales. The DOE does not anticipate any significant adverse environmental impacts as a result of this project. The project does not involve the installation of any structures or roads. Upon completion of this activity, the sites would be revegetated and recontoured where applicable.

PUD and DOE has engaged the United States Forest Service (USFS) on the two sites in King County located on the Mount Baker-Snoqualmie National Forest Skykomish Ranger District. The USFS previously contacted the SHPO regarding cultural resources on the two sites located on the Mount Baker-Snoqualmie National Forest Skykomish Ranger District. Under Section 106, DOE did contact the SHPO about all five proposed sites (including the two on USFS) to support funding the drilling activities. SHPO concurred there would be no affect on August 23, 2010. Historical Resources Associates (HRA) conducted a Cultural Resource Record Search and survey of the Youngs Creek Hydroelectric project site in 1990 and also in 1993. After the records search, a field survey and consultation with the Tulalip tribe, HRA identified no cultural resources of historical significance. They recommended no mitigation measures. The HRA referenced reports are included in PMC record PUD contracted with HRA to conduct a Cultural Resource Record Search and focused on Garland Mineral Springs and drillsite DNR 26-1. In light of the limited size of the drilling holes and the fact that the work would be conducted within existing road beds, HRA found that further cultural resource studies would not be productive and were not recommended at this time. The Cultural Resource Record Search report for Garland Mineral Springs and DNR 26-1 is included the PMC record.

Informal U.S. Fish and Wildlife (Section 7) consultation was completed on August 8, 2010 determining a no effect on Threatened and Endangered Species.

According PUD all permits and notices are in place for this project.

Task 5.0) Evaluate exploration geothermal gradient wells and decide whether to continue focus on the Straight Creek Fault region or to shift focus on other areas

Subtask 5.1) Evaluation of exploration geothermal gradient wells: Evaluate the exploration wells based on temperature gradient, geologic composition, and other characteristics to assess potential for hydrothermal development.

Subtask 5.2) Decide to proceed with focus on Straight Creek Fault region or to shift focus to other regions
Decide on where to focus efforts next phase of exploration/development.

Task 6.0) Plan future exploration activities

Follow-on exploration activities will be determined based on evaluation of temperature gradient holes drilled under Task 4.0.

Task 7) Management and Reporting: Ensure that the project fully meets all District and DOE requirements by providing timely updates, full project documentation, and all necessary reports. Reports and other deliverables will be provided in accordance with the Federal Assistance Reporting Checklist following the instructions included therein. USFS completed a CX Decision Memo: Permit for Geothermal Exploration to Snohomish County Public Utility District USDA Forest Service, Mt. Baker-Snoqualmie National Forest Snohomish County, Washington approved August 12, 2010.

Tasks identified in the Statement of Project Objectives (SOPO) submitted to the DOE were compared to what was analyzed in the CX completed by the US Forest Service (USFS) to determine if those authorize those tasks (drilling geothermal gradient wells FS-1 and FS-2) on USFS property. Potential surface disturbing activities identified in the SOPO (temperature gradient, exploration, and geophysical survey) were analyzed in the USFS CX. Two of the five exploration wells by the USFS were identified in the CX and analyzed. Based upon the comparison of the SOPO to the CX, it has been determined that the CX sufficiently analyzes the environmental impacts of the tasks identified in the SOPO for two of the five wells, therefore the DOE is in agreement with USFS' CX. The other three of the five are analyzed above.

Condition of Approval: All mitigation and best management practices identified in the US Forest Service Categorical Exclusion signed August 12, 2010 are applicable to this proposal. This proposal comprises actions identified in US Forest Service Categorical Exclusion signed August 12, 2010 located in the PMC. Additionally, CX A9, B3.1, and B3.7 can be used for information gathering, onsite characterization, and construction of experimental geothermal wells.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Insert the following language in the award:

You are required to:

All mitigation and best management practices identified in the "CX Decision Memo: Permit for Geothermal Exploration to Snohomish County Public Utility District USDA Forest Service, Mt. Baker-Snoqualmie National Forest Snohomish County, Washington" approved August 12, 2010 are applicable to this proposal.

Note to Specialist :

This EF2A was written by Christopher Carusona II

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: 
NEPA Compliance Officer

Date: 8/24/10

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: _____