PMC-EF2a

(2.04.02)

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

RECIPIENT: KY Dept for Energy Development & Independence **STATE:** KY

PROJECT TITLE : EECBG Small Cities and Counties Initiative (subgrant): Livingston County Geothermal Project

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000013	DE-EE0000730.002		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:

B5.1 Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency that do not increase the indoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, designers), organizations (such as utilities), and state and local governments. Covered actions include, but are not limited to: programmed lowering of thermostat settings, placement of timers on hot water heaters, installation of solar hot water systems, installation of efficient lighting, improvements in generator efficiency and appliance efficiency ratings, development of energy-efficient manufacturing or industrial practices, and small-scale conservation and renewable energy research and development and pilot projects. The actions could involve building renovations or new structures in commercial, residential, agricultural, or industrial sectors. These actions do not include rulemakings, standard-settings, or proposed DOE legislation.

Rational for determination:

Kentucky Dept. of Energy Development and Independence will pass through EECBG funding to Livingston County. Livingston County would use DOE funding to install to install a 55 ton vertical closed-loop ground source heat pump system to service the new Livingston County Public Offices and Library Building, which is 27,850 square feet. This building is not on or eligible for the historic registrar. Thirty-six bore holes at a depth of 300 feet are planned within a well-field of 8,400 square feet. A five foot deep trench will be required in the area of the well field, which is a previously disturbed area. The anti-freeze solution will be Propylene Glycol at an anti-freeze/water ratio of 10%; bentonite grout will be used. The system has been designed and will be administrated by a member of the International Ground Source Heat Pump Association who has over 10 years of experience and over 30 GSHP installations completed to date.

The receipt will construct a containment retention basin for erosion and sedimentation control, prior to installation and in conformity with the U.S. EPA Best Management Practices. As part of the restoration effort, the site will be seeded with adaptive grass. The applicant will dispose of all non-hazardous waste at the county landfill. The contractor will be responsible for the disposal of the waste.

All drilling will be performed by way of an air-rotary process to a depth of 300'. Back filling will be completed utilizing a measured amount of manufactured sand to a depth of 15'-0" below finished grade. Boreholes will then receive a 10'-0" bentonite surface cap. Additionally, bentonite will be installed at each aquifer depth (10'-0" above and below) to prevent co-mingling of aquifers. Surface installation will consist of a 10"-0" depth bentonite surface cap to a point 5'-0" below finished grade. Horizontal header piping will then be bed in manufactured sand (6" above and below) and then earth fill will be place to finished grade. In order to prevent leakage, once the system is installed and prior to backfilling, the system will be pressure tested at 100 psi for 90 minutes. Any leaks identified will be repaired and the test performed again until the system can hold 100 psi for 90 minutes with no leakage.

Because of the wide-spread acreage of known Karst topography in Kentucky an analysis was conducted comparing known formations to the project location. It has been concluded that this project will not take place in a known area of Karst occurrence.

After conducting a floodplain review using Kentucky's Flood Hazard Mapping (http://kygeonet.ky.gov/flood/viewer.htm) of the proposed site location it has been concluded that the project will be located within a 500 year floodplain (Zone AE, FEMA Q3). There are neither wetlands nor coastal areas on or adjacent to the proposed project location.

After a thorough review of the submitted information, it has been determined that the proposed project will not have a significant impact to human health and/or environment. Therefore, all activities in the proposed project are

categorically excluded under CX B5.1 "actions to conserve energy" from further NEPA review.

NEPA PROVISION

Insert the following language in the award:

You are required to:
This project will conform to 401 KAR 6:310 "Water Supply Well Construction Practices and Standards" before project implementation can occur.

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 4/28/10

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