PMC-EF2a

(2.06.02)

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

RECIPIENT: Nashua-Plainfield Community Schools; a SEP sub-recipient of the Iowa Economic Development Authority **STATE:** IA

PROJECT TITLE : Nashua-Plainfield Community Schools Geothermal System

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-000052	EE0000162	GFO-0000162-018	EE162

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:

B5.19 Ground source heat pumps The installation, modification, operation, and removal of commercially available smallscale ground source heat pumps to support operations in single facilities (such as a school or community center) or contiguous facilities (such as an office complex) (1) only where (a) major associated activities (such as drilling and discharge) are regulated, and (b) appropriate leakage and contaminant control measures would be in place (including for cross-contamination between aquifers); (2) that would not have the potential to cause significant changes in subsurface temperature; and (3) would be located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rational for determination:

The U.S. Department of Energy (DOE) provided funding to the State of Iowa under the American Recovery and Reinvestment Act (ARRA) of 2009 State Energy Program (SEP). Iowa proposes to loan $221,340 to Nashua-Plainfield Community Schools to install an open loop ground source heat pump (GSHP), which would be administered under the Iowa Economic Development Authority ARRA Revolving Loan Program.

Nashua-Plainfield Community Schools propose to install an 85 ton open loop GSHP at the Nashua-Plainfield Wellness Center which will be located at 700 Andrews Street, Nashua, Iowa 50658. The Wellness Center is a new building, ~26,000 sq. ft., which will be used by the adjacent schools for physical fitness activities. The GSHP would provide heating and cooling for the building.

The total area of disturbance for the well field would be two 12.5 inch diameter wells at an average depth of 190 ft. The wells would utilize potable water drawn from the Cedar Valley Limestone formation, no anti-freeze solution or chemicals will be utilized. The supply and injection wells would be identical and will adhere to public drinking water supply standards. The wells would have ~120 ft. of 8 inch casing installed, with a tremie pipe installed to the bottom annulus and pumped with neat cement grout to prevent cross contamination between layers of strata in the limestone aquifer. The wells would have 7 inch diameter perforated liner from 120 ft. to 190 ft.

Based on State requirements, the proposed project is not required to have Iowa Department of Natural Resources (IDNR) approval of a Well Water Pollution Prevention Plan (WWPPP). Drill cuttings would be collected based on the best management practices developed for the site's Well Water Pollution Prevention Plan (WWPPP). All cuttings would be limestone chips and would be disposed of off site, adhering to Iowa Department of Natural Resources (IDNR) regulations.

U.S. Environmental Protection Agency (EPA) determined the project does not require an EPA Underground Injection Control permit but a state issued operating permit. The project received Water Use permit #9619 from the IDNR. The permit allows for withdrawals of water from the aquifer at a maximum rate of 200 gallons of water per minute throughout the year, and a total maximum quantity of 23 million gallons per year.

All trenching required for the supply and return lines running from the wells to the geothermal heat exchange equipment inside the Wellness Center would be backfilled and would meet State of Iowa mandated specifications for site and soil restoration. Approximately 80 cubic feet of soil would be excavated, including the horizontal trenching required to connect the well field to the building mechanical system. Erosion control and storm water management plans would be implemented at the proposed site as part of the overall construction of the new building. The site

would be restored to its previous grade and condition following the installation.

Installation of the wells would follow Iowa Department of Natural Resources rules/procedures and International Ground Source Heat Pump Association (IGSHPA) installation standards. The drilling contractor is IGSHPA certified.

The proposed project would be located in an area with other school buildings and open field space. The construction would cause temporary disturbance to traffic patterns in the area, and the noise level would increase from the temporary drilling activity. These are considered to be minor disruptions and would not have a significant impact on human health and environment.

The Iowa State Historic Preservation Office has reviewed the project and in a letter dated February 7, 2012, concluded that "no properties listed in or eligible for the National Register of Historic Places will be affected by this project." The U.S. Fish and Wildlife Service Endangered Species Program website does identify three species in Chickasaw County, Iowa, the Prairie bush-clover, Western prairie fringed Orchid, and the Eastern Massasauga. DOE has determined that the ground source heat pump would have minimal ground disturbance and is not likely to adversely affect the resources in the area. The proposed project is approximately 1/3 of a mile from any wetlands or water resources.

Based on review of the project information and the above analysis, DOE has determined the installation of the proposed 85 ton GSHP would not have a significant impact to human health and/or environment. DOE has determined the proposed project is consistent with the actions contained in B5.19 "Ground source heat pumps", and is categorically excluded from further NEPA review.

Any further projects will require a separate NEPA determination review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

Diana Scott 7.24.2012

DOE Funds: $221,340
Leveraged Funds: $553,392
Total Project Cost: $774,732

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 7/26/2012
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