United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Prineville District Office
3050 N.E. 3rd Street
Prineville, Oregon 97754

IN REPLY REFER TO:

DOI-BLM-OR-P000-2011-0004-EA
3072-P

Dear Interested Public:

You are receiving this letter because you may be interested in a proposed geothermal demonstration project at Newberry Volcano. The Bureau of Land Management has received a Notice of Intent to Conduct Geothermal Resource Exploration Operations from Davenport Newberry Holdings LLC and AltaRock Energy, Inc. proposing to develop and test an enhanced geothermal system (EGS) reservoir on the western flank of Newberry Volcano.

The proposed site is approximately 22 miles southwest of Bend, in the Bend-Fort Rock Ranger District of the Deschutes National Forest (see attached map), in an area of Federal Geothermal Leases held by Davenport Newberry Holdings LLC. The leases are outside of the Newberry National Volcanic Monument, in an area designated as suitable for geothermal exploration and development during the creation of the Monument.

The Geothermal Steam Act of 1970 (Act) gives the Secretary of the Interior the responsibility and authority to manage geothermal operations on lands leased for geothermal resource development by the United States of America, and the Secretary has delegated this authority to the Bureau of Land Management (BLM). The US Forest Service (USFS) is the federal agency responsible for managing surface activities within the National Forest. Because the geothermal leases to be explored are located entirely on public lands within the Deschutes National Forest, the BLM has entered into a cooperative agreement with the USFS for the preparation of this environmental document. Additionally, because the Department of Energy (DOE) is funding a portion of this proposal, they have also been added as a cooperating agency. Based on the proposed Plan of Exploration, Operations Plan, seismic risk assessment and the BLM National Environmental Policy Act (NEPA) of 1969 regulations, it has been determined an environmental assessment (EA) is the appropriate document to analyze this project.

This EA (DOI-BLM-OR-P000-2011-0004-EA) will be guided by the Deschutes National Forest Land and Resource Management Plan (1990) and will incorporate by reference the 1994 Newberry Geothermal Pilot Project Final Environmental Impact Statement and Record of Decision, the 2007 Newberry Geothermal Exploration Project Environmental Assessment and Record of Decision (EA No. OR-050-07-075), and the 2008 Programmatic Environmental Impact Statement (PEIS) and Record of Decision for Geothermal Leasing in the Western United States (BLM-WO-GI-09-003-1800).

The proposed project would develop and test an EGS reservoir beneath an existing geothermal well pad (well 55-29) that Davenport constructed in 2008. Creation of the below ground EGS reservoir would be accomplished by using a process termed hydroshearing. Hydroshearing is the process of creating minute cracks in the subsurface rock formations along existing natural fractures by injecting groundwater deep into the existing geothermal well (at depths of approximately 7,500 to 10,000 ft.). Shallow groundwater wells located at the site would be used to provide water for the project. The goal is to create an underground network of minute fractures or pore spaces in the hot rock that would serve as a heat exchanger. This will become an EGS reservoir underground where cold water can be pumped in from the surface, heated naturally by the hot rocks below, and then brought back to the surface as hot water. Once the reservoir is created, up to two additional deep geothermal wells would then be directionally drilled on the same well pad, allowing water to be circulated between the wells in order to extract the heat from the hot rock below.

Minute fractures created during the hydroshearing or "stimulation process" will be monitored and mapped. To accomplish this, an array of microsesimic monitoring stations would be installed in boreholes drilled to a depth of up to 1,500 ft deep surrounding the well pad. This microseismic array (MSA) would monitor the injection activities. Up to 9 MSA boreholes would be drilled using a truck-mounted rotary drilling rig. The potential borehole locations are shown in Figure 2. Where possible, existing well sites will be used to minimize surface disturbance. All sites are accessible from existing USFS roads; no new roads will be necessary. Site dimensions for the drilling of the MSA boreholes are expected to average approximately 100 ft. x 100 ft. to accommodate a drill rig and water truck. Total surface disturbance is expected to be approximately 2 acres. Other than these 9 MSA locations, the remainder of the activity would occur on the previously permitted and constructed well site, 55-29.

Once the underground EGS reservoir is created, a long term circulation test of approximately 30-60 days would be conducted in order to test the circulating system and to collect data for the project. This data will be used to create a conceptual model of what a hypothetical EGS wellfield and power plant might look like. The test system will not use geothermal energy to produce electricity and no power plant is proposed at this time.

The International Energy Agency has developed a protocol for dealing with induced seismicity during geothermal projects. The U.S. DOE has adopted this protocol for all EGS demonstration projects such as the one proposed at Newberry. As part of this protocol, an independent consultant will prepare an Induced Seismicity and Seismic Hazards Risk Analysis. In the analysis, any existing seismic hazards in the project area will be identified and the risk associated with induced seismicity will be quantified. Mitigation measures will be implemented if induced seismicity events approach defined limits. These measures include reducing the rate of water injection and the ability to flow back the well to reduce reservoir pressure.

If you would like more detail on the proposed project, the complete Plan of Exploration, Operations Plan and Drilling Program can be found online at: http://www.altarockenergy.com/.

The proposal in the Plan of Exploration and Operations Plan represents the proposed action to begin the process for site-specific environmental analysis. Concerns and comments gathered

from the public, Tribes, other government agencies, and BLM, USFS and DOE personnel will be considered in the analysis. After this analysis is completed, the Responsible Official will decide whether or not to implement this project, and if there is a finding of no significant impact, a Decision Record will be signed.

We would like to hear your comments on this proposal, especially how this project could affect your use of this area, or other issues or concerns you may have. If you have any additional questions about this project, please contact Linda Christian at 541-416-6890 or by e-mail to OR_Newberry_EGS_Project@blm.gov. *Before including your address, phone number, e-mail address, or other personal identifying information in your comment, please be advised that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.*

If you would like to respond in writing please do so to:

Newberry Geothermal Project
Bureau of Land Management
3050 N.E. Third Street
Prineville, OR 97754

For your comments to best be utilized, please respond by November 22, 2010.

Sincerely,

Debra Henderson-Norton
District Manager

Enclosures