Prineville District

Finding of No Significant Impact

Determination

Introduction:

The Bureau of Land Management (BLM) has conducted an environmental analysis entitled "Drilling, Testing, and Monitoring of up to 12 Temperature Gradient / Passive Seismic Geothermal Exploratory Wells (EA) No. DOI-BLM-OR-P000-2010-0003-EA". In this EA, the BLM is analyzing potential impacts of implementing a proposed Plan of Exploration (POE), to explore geothermal resources within the Bend-Fort Rock Ranger District of the Deschutes National Forest, Deschutes County. BLM is the lead agency responsible for management and administration of federal geothermal leases and subsurface activities. The USDA Forest Service is the agency responsible for managing activities that occur on National Forest lands; therefore, the Deschutes National Forest has a role as a cooperating agency in this environmental analysis. In addition the Department of Energy is funding portions of this proposal and is also a cooperating agency. The DOE will be issuing their own Finding of No Significant Impact on this project.

The primary purpose and need of this project is to assess the potential for geothermal energy development on the western flank of Newberry Volcano (outside of the Newberry National Volcanic Monument). Based on the findings, the applicant will decide if the geothermal resource is sufficient or if there are additional exploration needs. Either of these future scenarios is dependent on drilling and data results and cannot be determined at this time.

The project is located on seven federal geothermal leases held by Northwest Geothermal Company (NGC) issued by the BLM in 1982-2003 on the western flank of Newberry Volcano on the Bend Fort Rock Ranger District of the Deschutes National Forest, Deschutes County, Oregon. A no action alternative and one action alternative were analyzed in the EA.

The proposed project consists of drilling up to twelve temperature gradient / passive seismic monitoring wells, each to depths of approximately 2,500 to 3,500 feet. These wells are relatively shallow and will be of small diameter (4.5 inches or less). They are not intended to reach the geothermal resource and will not be deep enough to do so. Drilling will be done with small, truck-mounted equipment, similar to that used to drill domestic water wells. Individual drilling sites would be less than 100 feet x 100 feet in size (less than 0.23 acres for each site), and located on or along existing spur roads. No new road construction will be needed.

Chapter 2 of the EA fully describes the alternatives considered, elaborates on issues raised during scoping and identifies potential impacts related to the different alternatives.

Plan Conformance:

The proposed project lying entirely within the boundaries of the Bend-Ft. Rock Ranger District, Deschutes National Forest, has been reviewed and found to be in conformance with the Deschutes National Forest Land and Resource Management Plan (1990 as amended) and associated Record of Decision.

Finding of No Significant Impact Determination:

Based upon a review of the EA and the supporting documents, I have determined that the project is not a major federal action and will not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27 and do not exceed those effects described in the Deschutes National Forest LRMP as amended. Therefore, an environmental impact statement is not needed. This finding is based on the context and intensity of the project as described:

Context: The project is a site-specific action directly involving approximately 2.5 acres of Deschutes National Forest administered land by itself does not have international, national, regional, or state-wide importance.

Intensity: The following discussion is organized around the Ten Significance Criteria described in 40 CFR 1508.27 and the additional criteria as required by the following Instruction Memorandum, Acts and Executive Orders: Instruction Memorandum No. 99-178, the Lacey Act, as amended; the Federal Noxious Weed Act of 1974; the Endangered Species Act of 1973, as amended; Executive Order 13112 on Invasive Species; Executive Order 12898 on Environmental Justice; Clean Water Act of 1987; Safe Drinking Water Act Amendments to the Clean Water Act of 1996; Executive Order 12088 on federal compliance with pollution control standards, as amended; Executive Order 12589 on Superfund compliance; and Executive Order dated July 14, 1982 on intergovernmental review of federal programs.

1. **Impacts may be both beneficial and adverse**. The proposed action would impact resources as described in Chapter 2, and 4 of the EA. Mitigations to reduce impacts to these resources were incorporated in the design of the action alternative. None of the environmental effects discussed in detail in the EA and associated appendices are considered significant, nor do the effects exceed those described in the Deschutes National Forest LRMP as amended.

2. **The degree to which the selected alternative will affect public health or safety**. The proposed action is designed to assess the geothermal resource potential on the western flank of Newberry Volcano for electrical power generation. There are no known or anticipated threats to public health or safety as a result of implementing the proposed action.

3. **Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farm lands, wetlands, wild and scenic rivers, or ecologically critical areas**. The historic and cultural resources of the area have been inventoried and potential impacts mitigated in the design of the proposed action. There are no effects on park lands, prime farm lands, wetlands, wild and scenic rivers, or ecologically critical areas as a result of implementing the proposed action.

4. **The degree to which the effects on the quality of the human environment are likely to be highly controversial**. This action is not scientifically controversial. The proposed actions are similar, the same or consistent with numerous other permitted geothermal exploration activities throughout the western United States.

5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.** The project is not unique or unusual. The BLM has experience implementing similar actions in similar areas. The environmental effects to the human environment are fully analyzed in the EA. There are no predicted effects on the human environment that are considered to be highly uncertain or involve unique or unknown risks.

6. **The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.** The actions considered in the preferred alternative were considered by the interdisciplinary team within the context of past, present, and reasonably foreseeable future actions. Significant cumulative effects are not predicted. A complete analysis of the effects of the preferred alternative and all other alternatives is described in Chapter 4 of the EA.

7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.** The interdisciplinary team evaluated the possible actions in context of past, present and reasonably foreseeable actions. Significant cumulative effects are not predicted. A complete disclosure of the effects of the project is contained in Chapter 4 of the EA.

8. **The degree to which the action may adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.** The project will not adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places, nor will it cause loss or destruction of significant scientific, cultural, or historical resources.

9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.** Mitigations to reduce impacts to wildlife and fisheries have been incorporated into the design of the action alternatives. No listed fish species occupy habitat within the project boundary or habitat adjacent

and immediately downstream within watersheds of the project boundary. No other threatened or endangered plants or animals were observed in the area.

10. **Whether the action threatens a violation of a Federal, State, Local, or Tribal law, regulation or policy imposed for the protection of the environment, where non-Federal requirements are consistent with Federal requirements.** The project does not violate any known Federal, State, Local or Tribal law or requirement imposed for the protection of the environment. State, local, and tribal interests were given the opportunity to participate in the environmental analysis process. Furthermore, the project is consistent with applicable land management plans, policies, and programs.

11. **Comply with Executive Order 11988 (Floodplain Management), Executive Order 11990 (Protection of Wetlands), or the Fish and Wildlife Coordination Act (water resource development projects only).** There are no floodplains, wetlands or water resource projects involved in this project.

12. **Involve unresolved conflicts concerning alternative uses of available resources (NEPA section 102(2)(E)) not already decided in an approved land use plan**. There are no unresolved conflicts not already approved in land use plans.

13. **Have a disproportionate significant adverse impacts on low income or minority populations; Executive Order 12898 (Environmental Justice).** This project does not have a disproportionate significant adverse impacts on low income or minority populations; Executive Order 12898 (Environmental Justice).

14. **Restrict access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners or adversely affect the physical integrity of such sacred sites; Executive Order 13007 (Indian Sacred Sites). Have significant adverse effect on Indian Trust Resources.** This project does not restrict access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners or adversely affect the physical integrity of such sacred sites; Executive Order 13007 (Indian Sacred Sites). This project does not have significant adverse effects on Indian Trust Resources.

15. **Contribute to the introduction, existence, or spread of: Federally listed noxious weeds (Federal Noxious Weed Control Act); or invasive non-native species; Executive Order 13112 (Invasive Species).** This project does not contribute to the introduction, existence, or spread of: Federally listed noxious weeds or invasive non-native species.

16. **Have a direct or indirect adverse impact on energy development, production, supply, and/or distribution; Executive Order 13212 (Actions to Expedite Energy-Related Projects).** This project does not have a direct or indirect adverse impact on energy development, production, supply, and/or distribution.

Approved By: /S/ Deborah Henderson-Norton 4/29/10

District Manager Date

DECISION RECORD

EA Number: DOI-BLM-OR-P000-2010-003-EA
Title of Action: Drilling, Testing, and Monitoring of Temperature Gradient/Passive Seismic Geothermal Exploration Wells
BLM Office: Prineville District

Decision:

On August 31, 2009 a Notice of Intent to Conduct Geothermal Resource Exploration Operations (NOI) was submitted to this office by Davenport Newberry LLC to drill up to twelve temperature gradient/passive seismic monitoring wells within Federal Geothermal Leases OR11996, OR12417, OR65371, OR65470, OR12399, OR49090, OR12397, OR12383,OR15927, OR12387, and OR12437 in Townships 20 South, Range 12 East; 21South, Range 11 East; 21 South, Range 12 East; 22 South, Range 11 East; and 22 South, Range 12 East, in the Bend Fort Rock District of the Deschutes National Forest, Deschutes County, Oregon. An Environmental Assessment titled "Drilling, Testing, and Monitoring of up to 12 Temperature Gradient / Passive Seismic Geothermal Exploratory Wells (EA No. DOI-BLM-OR-POOO-2010-003-EA" was prepared. A 30-day public review and comment period ended April 19, 2010. After a review of the comments received, it is my decision to approve the Notice of Intent (NOI) as described in the Environmental Assessment subject to the mitigations listed below.

Description of the Project:

The project is located on seven federal geothermal leases held by Northwest Geothermal Company (NGC) issued by the BLM in 1982-2003. The proposed project consists of drilling up to twelve temperature gradient / passive seismic monitoring wells, each to depths of approximately 2,500 to 3,500 feet. These wells are relatively shallow and will be of small diameter (4.5 inches or less). They are not intended to reach the geothermal resource and will not be deep enough to do so. Drilling will be done with small, truck-mounted equipment, similar to that used to drill domestic water wells. Individual drilling sites would be less than 100 feet x 100 feet in size (less than 0.23 acres for each site), and located on or along existing spur roads. No new road construction will be needed. On some of the narrower spur roads, some trimming of vegetation will be necessary as well as some light grading in spots where the road has not been maintained. The combined total area disturbed for the entire project (12 wells) will be less than approximately 2.5 acres.

The wells will be "dual purpose" to minimize the number of wells needed. The wells will be used to acquire temperature gradient data (changes in temperature at different

depths), and passive seismic data ("listening" to the underground geology), to help characterize the underground features and learn more about the geothermal resource.

All sites will be revegetated and recontoured within one year of the completion of the project. All revegetated areas will be monitored by Davenport Newberry for 3 years following the completion of restoration to ensure establishment of new vegetation and any need for unwanted vegetation or animal damage control. Annual reports will be filed with the Forest Service through the BLM contact for the project.

Rational for Decision:

I have reviewed the public and agency comment letters received by this office during the NEPA process. The EA and mitigation measures were modified based on the comments received. This Decision Record includes the mitigation measures, public comments and responses to those comments.

The rationale for approval of this project includes:

A. This decision is consistent with the purpose for which lands were leased by the United States of America to NGC, and which conveyed to NGC, the "exclusive right and privilege to drill for, extract, produce, remove, utilize, sell, and dispose of geothermal steam and associated geothermal resources." To maintain this right, NGC must "diligently explore the leased lands for geothermal resources until there is production in commercial quantities" applicable to each of these leases.

B. The decision is consistent with surface use stipulations that were made part of the Leases OR11996, OR12417, OR65371, OR65470, OR12399, OR49090, OR12397, OR12383,OR15927, OR12387, and OR12437.

C. The exploration of the geothermal resource is consistent with initiatives of the National Energy Policy and supports the National Renewable Energy Initiative by providing more information about the energy production from geothermal resources.

D. No impacts were identified in the subject EA which cannot be adequately mitigated and that would justify denial of the applicant's rights granted under the existing lease. The potential impacts of this project are to wildlife and wildlife habitat, visual quality and removal of vegetation from established tree plantations and the resulting deferred volume available for future harvests.

Additionally, BLM will monitor the drilling procedures and adherence to the mitigation measures prepared in the BLM approved Geothermal Drilling Permit (GDP) and Sundry notices (GSN).

Wildlife: The Forest Service and members of the public expressed concern about impacts to wildlife and wildlife habitat. These concerns include: Disruption of nesting or removal of nesting, foraging, and fledgling habitat within 0.25 miles of drilling activity, disturbance of nesting sites during breeding season for bald eagle, osprey, and goshawk; removal of tree covers within wildlife travel corridors; and noise disturbance.
Impacts from this project to raptors will be avoided by conducting additional second year raptor surveys prior to any ground breaking activities and seasonal restrictions will be in effect if any additional raptors are found. These restrictions ensure nesting and fledgling activities are not interrupted by stopping all activity seasonally. As a project design feature, pad locations were selected to minimize the removal of tree cover. Four drilling sites occur immediately adjacent to or within designated travel corridors and late and old structured stands (TG24N, TG 30N, TG 32S and TG 19S). While the well sites were chosen specifically to minimize the amount of vegetation to be cleared, some removal of vegetation will be necessary. Less than 0.25 acres per site and less than 1 acre total vegetation would be removed adjacent to or within these areas. The vegetation removed would be primarily small lodgepole and ponderosa pine trees, shrubs, and grasses typical of the plant associations in that area. The small size of these areas, and their location adjacent to existing roads and clearings, will minimize the footprint and any potential disturbance to the forest wildlife habitat. The proposed project will not involve long-term use of the sites by large equipment including a drilling rig. The number of days that there would be any human or mechanical activity is limited, and expected to be less than 60 days total at each site. This temporary and short duration of activities will minimize any disturbance to wildlife near these four sites.

Visual Quality: Vegetation removal on the drill sites has the potential to cause small areas to not meet the goals for highest possible visual quality as seen from selected viewpoints. Four proposed sites (29N, 24N, 2S, and 32S) are located within the Scenic Views Management Area, MA-9, which emphasizes scenic values and includes the goal of providing Forest visitors with high quality scenery that represents the natural character of central Oregon. The general theme and objectives of MA-9 provides that to the casual observer, results of activities either will not be evident or will be visually subordinate to the natural landscape. Preparation of the well sites will be done in a manner to help achieve this visual objective. Areas with the least amount of vegetation, such as spur roads and landings formerly used in logging operations, will be incorporated as much as possible into each well site. Existing openings will be modified only to the extent needed to accommodate equipment. No large trees will be removed. No permanent structures will be constructed. The shape, size, color, edge effect, and pattern of existing openings will be repeated and visual attributes already present at each site will be retained. Once the drilling equipment has been removed and the site restored, each small former well site will blend in with the landscape character and not appear changed or out of place. Several standard & guidelines from the Deschutes Lands and Resource Management Plan provide guidance for siting other multiple use projects within a Scenic Views

Management Area. Standard & Guidelines M9-5, M9-24, M9-41, M9-55, and M9-67 provide direction that "trees may be removed where necessary to provide access for special uses, mineral activities, and administrative purposes". Standard & Guideline M9-83 provides that "mineral developments, utilities, and electronic sites may be located in these (Scenic Views) areas if the facilities and associated improvements are located, designed, and maintained to blend with the characteristic landscape". Standard & Guideline M9-84 directs that "trees may be removed within the Scenic Views Management Area where necessary to permit access to geothermal sites, mineral development, electronic sites, utilities, and other special uses sites".

Removal of vegetation from established tree plantations:
Clearing of drilling sites has the potential to remove vegetation from established plantations and young or mature timber stands. This may result in a loss of investment in time and dollars that have been spent to replant and manage these stands towards a timber production goal on General Forest lands. In addition it postpones the volume available for harvest. Preparing drilling sites will require the removal of less than 0.25 acres of vegetation per site for a total of less than 2.5 total acres of disturbance. The drilling sites are purposefully located within cleared or partially cleared areas alongside existing roads. The small size of each of these areas, and their location adjacent to existing roads and clearings, will minimize the footprint and any potential loss of vegetation. Because the trees to be removed are for the most part smaller diameter trees, very little loss of established plantations or mature timber stands would take place.

<u>Best Management Practices (BMP), Project Design Features (PDF) and Mitigations:</u>

The following BMPs, Project Design Features and Mitigation measures will be required as part of my decision and were compiled from BMP's, PDF's and mitigations in the Environmental Assessment, public agencies and public comment letters.

Soil BMPs

- Develop and include site specific prescriptions, design criteria and mitigation measures to protect soil, water, aquatic and riparian resources in design plans, contracts, and/or permits. Employ design, construction techniques and other practices to avoid, limit, or mitigate surface disturbances as well as maintain the reclamation potential of the site.
- Plan to limit land surface disturbance to the extent practicable while still achieving project objectives.
- Avoid adverse long-term impacts to soil, water, and riparian resources.
- When impacts cannot be avoided, limit disturbance to the minimum necessary and retain critical components, structures, and processes.
- Mitigate impacts and restore areas as needed.
- Protect steep slopes, highly erodible soils or unstable areas.
- Prevent or restore detrimental soil compaction.
- Identify and avoid unstable slopes and sensitive landforms.
- Maintain long-term site productivity.
- Integrate restoration and rehabilitation needs into the project plan.

- Prevent contamination of surface or groundwater resources by using tanks for storing drilling fluids.

Avoidance BMPs

- Locate sites away from the immediate vicinity of surface waters, SMZs and floodplains.
- To avoid unwanted impacts to soil resources, use existing compacted sites such as landings, skid-trails, truck turn-arounds, or road surfaces for drilling sites when possible.
- Avoid unstable slopes and sensitive soils.
- Avoid steep slopes requiring cut-and-fill excavation and site leveling.

Minimization and Prevention BMPs

- Minimize the disturbance footprint.
- Minimize disturbance or removal of adjacent vegetation to promote rapid vegetation recovery or regrowth after project completion.
- Use proper erosion and stormwater control practices during site development and project implementation.
- Properly manage all exploration-related wastes to protect groundwater and surface water quality.
- Prevent drilling mud, bentonite clay, industrial oils and fuels, and potentially sulfur-laden water from transport off-site, into a ground water source, or a drainage feature on a road.
- Use portable tanks to contain drilling fluids and exhumed water to the extent feasible.
- Properly contain and dispose of any hazardous or toxic materials. A condition of the permit will be a spill-prevention and containment plan.
- Dispose of non-toxic tailings or drilling mud only at approved sites. Approved disposal sites should be on nearly level ground (ex. existing rock pits). Avoid sites near existing surface water features and areas where ground water is close to the surface, including seasonal high water tables. Disposal of drill cuttings and spent drilling mud that will be contained in the surface tanks will be taken to an offsite area at the Carey Matthews ready mix pit.

Post-Project Restoration BMPs and Mitigation

- Reclaim disturbed areas within one year after completing project work.
- Where previously un-compacted sites are used; subsoil drill pad sites that have become detrimentally compacted upon project completion (TG29N, TG19N, TG32S, and TG16S).
- Subsoil drill pad sites that are developed in plantations where subsoiling occurred previously (sites TG19N, TG12S, TG7S)
- Where previously un-compacted sites are used; salvage and stockpile topsoil materials and coarse woody debris (CWD) that are scraped or excavated from the surface as a result of grading and site development. Re-apply and contour topsoil

materials and any CWD back onto the site after project completion for restoration (TG29N, TG19N, TG32S, and TG16S).
- Recountour any excavated soil materials resulting from site leveling on gentle or moderate slopes (sites TG7S).
- Revegetate or otherwise stabilize salvaged topsoil to minimize erosion and maintain soil fertility.
- As directed by the Forest Service, where larger live green trees are removed, retain the boles and distribute onto the site as course woody debris after project completion.
- Decommission non-system or new roads that may be used for drill site access after project completion (TG12S).
- Permanently seal abandoned wells using appropriate protective measures.
- Davenport Newberry LLC is required to monitor the growth and animal damage to replanted trees and other vegetation for three years following rehabilitation of sites and a report will be submitted to the BLM.

Transportation System BMPs
The following items will be stipulated by the Forest Service Road Manager to be included in the BLM Sundry Notices prior to drilling operations:
- A completed Road Use Plan identifying the following: all roads used to access the pad sites; roads used to transport water from the wells; roads requiring brushing and maintenance; and any temporary roads used as part of the operations. The roads listed above will be identified and mapped as on-lease or off-lease.
- Compliance with Laws and Regulations.
- Nonexclusive Use.
- Contractor Insurance Requirements.
- Damage to Roads.
- Road maintenance specifications.
- Method for disposal of generated slash from roadside brushing.
- Roadway temporary approach criteria and design.
- Listing of roads proposed to be closed during activities.
- Restoration of impacted roadways.
- Danger Trees – Must meet R6 policy
- Site and communication plan approval.

In addition the Forest Service will be issuing their own road use permit as some access to the pads is off of BLM issued leases.

Site Specific Road Concerns
TG19N- Along 9735 Highway Safety Act road
- Transportation and sign plan must be submitted and approved by FS.
- Appropriate road signing, must meet Manual on Uniform Traffic Control Devices (MUTCD) standards.
- All activities must be safely off roadway.
- The need for certified flaggers during operation periods.

- Will need to be certain that there are adequate sight distances for traffic pulling onto 9735.
- TG7S- Runoff and drainage issues.

Fire and Fuels

Objectives: Avoid project related fire ignitions, provide for timely notification and coordination with the Forest Service in the event of a fire in the project area, and provide for public and operator safety. Provide for timely clean-up of project generated fuels.

Fire Prevention: Fire precaution measures will be in place and in accordance to State of Oregon Industrial Precaution Level (IFPL) fire prevention program. Fire extinguishers and tools will be kept on site at all times and with each vehicle. Communication will be maintained and emergency services will be contacted in the event of an emergency. An operating plan for emergency notification needs to be in place prior to implementation.

All slash will be disposed of by the Forest Service to their specification and financed by the proponent.

Tree Removal
No trees will be cut until marked by a Forest Service representative including snags that pose a hazard to drilling operations. Loss of snags larger than 12 inches dbh will be mitigated with suitable creation of snag replacements.
Current cutting spec for Lodgepole Pine saw is 7.0" dbh to a 6.0" top dib. and a 8 foot minimum length.
Current cutting specifications for Ponderosa Pine are 8.0” dbh to a 6.0” top dib. and 8 foot minimum length.
Biomass specs are currently 4.0" dbh to a 2.0" top dib. and a 16 foot minimum length.

Wildlife
Due to the detection of a northern goshawk at well 24N and the need for additional pre-construction surveys at TG 19S and TG 29N, there will be surveys conducted at these sites in the spring of 2010 (not earlier than May 15) in an attempt to locate the presence of a nesting pair. If nesting Goshawks are located within ¼ mile of these sites, drilling would be timed to not occur during the restricted nesting season of March 1 – August 31. If nesting red-tailed hawks are located within ¼ mile of these sites drilling would not occur during the restricted nesting season of March 1 to August 31 and if any Sharp-shinned and Coopers hawks are located within ¼ mile of these sites drilling would not occur during the restricted nesting season of April 15 to August 31.
If nesting raptors are not located during these surveys the drilling activities could commence.

Noxious Weeds

Davenport Newberry LLC will be responsible for conducting annual weed monitoring visits in June to ensure that weeds do not become established on the drilling sites. If weeds are found, the applicant will hand-pull them and bag them if flowers or seeds are present. The applicant will provide the Forest Service through the BLM, a brief annual report that shows compliance with this mitigation. Davenport Newberry LLC will be responsible for monitoring the area for two growing seasons after the work is done. For example, if the work is completed in the winter of 2010/2011, the applicant will monitor in the summers of 2011 and 2012. Weed monitoring will begin the first June after the project has been completed; it is strongly encouraged that the monitoring occurs at this time rather than later in the summer because the weeds will still be small and not flowering or producing seed. Davenport Newberry LLC will be released from further responsibility for weeds within the project area after the second year of monitoring/treatment is concluded. The annual weed monitoring report will be due no later than September 30, will include descriptions of when monitoring occurred, what weed species, if any, were found, and that they were treated. Hand-pulling will be the only treatment allowed as herbicides have not been approved for use.

To prevent the introduction of the seeds of noxious weeds onto National Forest land, Operator shall ensure all equipment moved onto National Forest land is free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds. Operator shall employ whatever cleaning methods necessary to ensure compliance with the terms of this provision, and shall notify the on-the-ground BLM/FS representative prior to moving each piece of equipment onto National Forest land. Notification will include identifying the location of the equipment's most recent operations. Upon request of the BLM/FS, arrangements will be made for BLM/FS to inspect each piece of equipment prior to it being placed into service.

Operator shall certify in writing, compliance with the terms of this provision prior to each start-up operation. Measures taken to ensure compliance for equipment present at start-up, and planned to be taken for equipment moved in later, will be identified in the certification. For the purposes of this provision, "equipment" includes all drilling machinery, and water or waste material hauling trucks, except for pickup trucks, cars, or other vehicles used to daily transport personnel.

Archaeology

An archaeologist will be present during the clearing of pad sites and drilling operation(s) to monitor for any inadvertent heritage resources. Any inadvertently discovered cultural items or sites encountered during the drilling operations will be protected until evaluation can be completed by the Forest Service archaeologist.

Appealing the Decision Record to the Interior Board of Land Appeals:

This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR 3265.1, 43 CFR, Part 4 and Form 1842-1. If an appeal is filed, your notice of appeal must be received in the Prineville District Office, 3050 NE Third Street, Prineville OR 97754 within 30 days of receipt of the decision but no later than May 24 2010. The appellant has the burden of showing the decision appealed is in error.

This geothermal management decision is issued under 43 CFR Part 3265.1 and is immediately effective and will remain in effect while appeals are pending unless a stay is granted in accordance with § 4.21(b) of this title. If you wish to file a petition of Stay, pursuant to regulation 43 CFR 4.21, for a stay of the effectiveness of this decision during the time your appeal is being reviewed by the Board, the petition for stay must accompany your notice of appeal. A petition for stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied.
2. The likelihood of the appellant's success on the merits.
3. The likelihood of immediate and irreparable harm if the stay is not granted.
4. Whether or not the public interest favors granting the stay.

Approved:

/S/ Deborah Henderson-Norton

Deborah Henderson-Norton
District Manager

Comments and Responses:

A total of three public comment letters and one tribal comment letter were received during the 30-day notice and comment period. Each letter was numbered and evaluated for comment content.

Eugene Butcher letter received April 8, 2010

This was a letter in support of the project

Klamath Tribes letter received March 26, 2010

Comment 1.1: "To date we have opposed all geothermal testing on or around Newberry Crater as the entire area is considered sacred by our people. "

Response: The project area and individual pad sites are outside and away from Newberry Crater. They are also outside the Newberry National Volcanic Monument, which encompasses areas with cultural, geologic, and scenic values. Establishment of the NNVM prevented commercial geothermal exploration and development within the NNVM area itself, but provides that it may occur outside the boundaries of the NNVM. The Klamath Tribes were represented on the local citizens' committee that made decisions regarding the location of the NNVM boundaries, which areas to include in the NNVM, and the terms for agreement to establish the monument.

Comment 1.2: "The testing is a brutal attack on our mother earth and has never been fruitful in its search for geothermal resources. In fact the only thing that has been accomplished has been the destruction of the earth in the different areas where the testing has taken place."

Response: The proposed exploration project has been analyzed by BLM and documented in an environmental assessment in accordance with NEPA. From the analysis, BLM concluded that there would be no significant impacts. There is no evidence to support the concern that the Project would be a brutal attack on the environment or that there has been destruction of the earth from past activities. To date, a viable geothermal resource has not been found, but past studies and exploration activities have revealed a great deal of scientific information about the subsurface features and geology which contribute to subsequent efforts to understand the geothermal potential of the area.

Comment 1.3: "What makes this worse is the fact that the areas have never been rehabbed by the companies that have been allowed to search for the geothermal resource."

Response: As stated in the EA (page 45), there are six large production-size well pads (each approximately 5 acres in size) located on the western flank of Newberry that are currently in active status and/or are being maintained by the geothermal leaseholder or

operator under terms specified by BLM and Forest Service. When these pads are no longer needed, the sites will be reclaimed and restored. Presently ORMAT who has pads in the Newberry area are in negotiations with the Forest Service to rehabilitate their inactive pads. A number of other sites (approximately 19) where exploratory drilling has taken place and the sites are no longer needed, have been reclaimed and restored to a natural condition. Once the wells have been drilled and temperature and geophysical data has been collected, each site would be restored to its original condition.

Comment 1.4: "The people of North America, Native and Non-Native have the right to protect their home from unwanted destruction and this entire area is an open geothermal testing pit."

Response: The proposed Project has been analyzed by BLM and documented in an environmental assessment in accordance with NEPA. Any effects would be site-specific and there will be no significant impacts. Small diameter shallow wells will be drilled on a pad less than ¼ acre in size, similar to domestic water wells that are commonly drilled in many areas. The area will not be an open testing pit.

<u>Sierra Club letter received April 19 2010</u>

2.1 Comment: Public "Economic Stimulus" Funds Were Awarded by the Department of Energy (DOE) Absent Public Environmental Analysis Process

Response: The DOE is a cooperating agency and has reviewed this EA and will be issuing their own FONSI for this project and this comment is more appropriately answered by the DOE.

2.2 Comment: There is a connected action between this project and the possible future AltaRock EGS project.

Response: The purpose of the proposed action including the temperature gradient/passive seismic monitoring wells is to collect information about the geology and geothermal resource at Newberry. They are not designed to encounter the geothermal resource and are too small and too shallow to do so. While the information obtained from the wells will hopefully be useful for any future geothermal utilization (traditional hydrothermal or EGS) they are exploratory and not intended to be used as part of any future geothermal utilization. See comment below for further information on connected actions.

2.3 Comment: Piecemeal Environmental Analysis Segmentation Violates the Requirements of the NEPA

Response: The proposal being analyzed in this EA is a proposal for a permit to conduct temperature gradient/seismic exploration to determine whether geothermal resources exist. This is not a proposal for full-scale development, nor is it a proposal that would commit the resource to full development. In addition, drilling is not anticipated to reach depths within the wells to reach the geothermal resource. The scope of analysis for this EA per CEQ 1508.16 will include connected actions. Because the potential authorization

of a permit to conduct exploratory drilling for geothermal resources does not automatically trigger the authorization to develop geothermal energy, the two are not connected actions as defined by the NEPA regulations 40 C.F.R. § 1508.25. The BLM and USFS retain discretion to approve/deny any future proposals for full-scale development of geothermal resources. Therefore this EA does not violate the requirements of NEPA. The Interior Board of Land Appeals (IBLA) has ruled in the BLM's favor on this same comment on the previous Geothermal EA.

2.4 Comment: BLM and the Forest Service are required to discuss and fully analyze the cumulative impacts of a project, 40 C.F.R. 1508.8.

Response: Cumulative impacts were accessed for the three issues of concern in chapter 4 of the EA. These included the incremental impact of past, present and reasonable foreseeable future actions.

2.5Comment: NEPA requires the Federal agency's to prepare a detailed Environmental Impact Statement (EIS) for all "major Federal actions significantly affecting the quality of the human environment.

Response: The Finding of No Significant Impact that is accompanying this Decision Record discusses the context and intensity of this action as described in the EA. It is the BLM's conclusion that, with the required mitigations imposed on the applicant, no environmental effects meet the definition of significance in context or intensity as defined by NEPA implementing regulations.

2.6 Comment: There is a significant need for additional adequate public notification, including public hearings & provisions to ensure all affected citizens and communities are notified and their comments and concerns are assessed and incorporated. Notification of this renewed geothermal exploration project has not been adequately provided, and public hearings have not been held.

Response: To conduct scoping pursuant to 40 C.F.R. 1501.7 scoping letters were mailed to more than 400 individuals, organizations, agencies, and central Oregon Tribes in October 2009 to notify potentially interested parties about the proposed action and to provide an opportunity for them to submit comments to be considered in the environmental analysis. Mailing lists from Prineville BLM, the Deschutes National Forest, and Davenport Newberry LLC were combined for use during scoping efforts to ensure that the greatest amount of interested and potentially interested parties would be reached. On November 4, 2009 the Bend Bulletin newspaper published an article about the opportunity to submit scoping comments that included the name and address of a BLM contact to receive comments. The Interior Board of Land Appeals (IBLA) has ruled in the BLM's favor on this same comment on the previous Geothermal EA.

2.7 Comment: The "Purpose and Need" for this project must meet the objective requirements of the NEPA. It may not be arbitrarily and capriciously contrived so that only the authorization of proposed geothermal exploration actions can be selected.

Response: The BLM is responding to a NOI submitted by Davenport Newberry LLC. In considering whether to deny or approve the proposal, BLM considered how well the alternatives, including the No Action Alternative would meet the objectives of the National Energy Policy; the Geothermal Steam Act; and the Deschutes Forest and Land Resource Management Plan (1990). The purpose and need is consistent with the objectives defined by the applicable statutes, policy, and plans. The Interior Board of Land Appeals (IBLA) has ruled in the BLM's favor on this same comment on the previous Geothermal EA.

2.8 Comment: Exploration is visible from the Newberry National Volcanic Monument

Response: Three of the viewpoints selected as indicators for this project are within the Monument, however The Newberry National Volcanic Monument legislation specifically provides that, "*the fact that activities or uses outside the Monument and Special Management Area can be seen, heard, measured, or otherwise perceived from within the Monument and Special Management Area shall not, of themselves, limit, restrict, or preclude such activities or uses up to the boundary of the Monument and the Special Management Area*".

2.9 Comment: The proposed exploration areas have not been surveyed for wildlife species which may currently be utilizing these areas. There has been no assessment completed regarding potential adverse impacts to wildlife species habitat, including nesting and fledging birds, amphibians, and terrestrial wildlife.

Response: In early August 2009, Northwest Wildlife Consultants conducted a database search for special status wildlife species records in the vicinity of the proposed well site locations. They also conducted a wildlife and habitat field investigation at and around each site. Species of interest included those determined to be "Management Indicator Species" (MIS) by the Deschutes National Forest Land and Resource Management Plan (USDA 1990) and "priority migratory bird species" as per the Migratory Bird Treaty Act (MBTA). Lists of migratory birds considered being "Birds of Conservation Concern" (BCC) by the U.S Fish and Wildlife Service (USDI 2002) for Bird Conservation Region 9 (BCR 9), and "focal" species by the Oregon-Washington Partners in Flight (Altman 2000) were used to address MBTA species.

In addition to this survey, the first year of field surveys for the northern goshawk in the Ogden project area, which overlaps with this project area, were completed in July 2009 by Forest Service wildlife biologists. As mitigation for this project additional raptor surveys will be conducted prior to any ground breaking and disturbing activities. A Biological Evaluation was prepared for this project February of 2010.

Oregon Wild letter received April 19, 2010

Comment 3.1: We wish to emphasize our earlier recommendation to drop geothermal drilling site TG-29N based on the following concerns:

1. This site is too far removed from the other sites to provide a comprehensive picture of the thermal resources in this area that is remote from the other drilling sites.

Response: The applicant chose this location in order to test the value of the northern extension of their lease block. This well is located to look for any geothermal convection associated with the vertical permeability associated with the NNW-trending vents and fractures. The chosen location for TG 29N is located in closest proximity to the greatest density of these fractures. It is located on a previously disturbed flat area immediately adjacent to an existing road in order to minimize surface disturbance and not require any new road construction. Removing TG 29N from the exploration program would remove the potential of answering scientific questions related to exploration evaluation of this area.

Comment 3.2: It is unclear how this project differs from the one we scoped on September 2007.

Response: The project that was scoped in September of 2007 was for Exploration wells that are drilled to depths of 8,000 to 10,000 feet with a diameter of 36 inches and were constructed on 5 acre pads. This project is for temperature gradient wells drilled to depths of 2,500 feet to 3,500 feet with diameters of 4 to 5 inches and built on sites less than ¼ acre in size.

Supplemental Information to the Temperature Gradient/Seismic testing Environmental Assessment

These are additions or corrections to the Environmental Assessment that resulted from internal and external review and comments.

1.7 Relationship to Statutes, Regulations, or Other Plans and Projects

Pg 10 – Newberry Management Plan. Transferral Corridors are not in the Monument boundary, but are managed under the conditions of the Plan.

Regional Forester Amendment #2–Revised Continuation of Interim Management Direction Establishing Riparian, Ecosystem, and Wildlife Standards for Timber Sales (Eastside Screens)

In August 1993, the Regional Forester provided direction to National Forests on the eastside of the Cascade Mountains for retaining old-growth attributes at the local scale and moving toward the historic range of variability (the range of forest conditions likely to have occurred before European settlement) across the landscape. This direction was called "Interim Management Direction Establishing Riparian, Ecosystem and Wildlife Standards for Timber Sales, Regional Forester's Forest plan Amendment" (USDA Forest Service, 1993) and became known as the "Eastside Screens". The screens limit certain types of activities in watersheds where old growth forests are now less common than the historic range of variability.

A decision notice issued in May 1994 amended all eastside Forest plans to include this direction. The May 1994 decision notice was revised in 1995 and was called "Revised: Interim Management Direction Establishing Riparian, Ecosystem and Wildlife Standards for Timber Sales, Regional Forester's Forest Plan Amendment #2", and has continued to be known as the "Eastside Screens" (USDA 1995a). Since the 1995 revision, there have been several letters of clarification from the Regional Office regarding the eastside screens. The Eastside Screens are intended to maintain management options for the future.

The Pacific Northwest Regional Office has consistently re-affirmed that direction in the Eastside Screens does not apply to timber sales incidental to such activities as special use and recreational activities. Examples of projects where the Screens do not apply:

-expansion of a rock pit
-clearing for construction of a scenic byway station
-highway widening
-expansion of a campground

The Screens do not apply to the temperature gradient well drilling project where small clearings will need to be created. No further findings of consistency are necessary.

Record of Decision and Final Environmental Impact Statement for Preventing and Managing Invasive Plants. October, 2005. USDA Forest Service, Pacific Northwest Region. This decision adds invasive plant management direction to all National Forest Land and Resource Management Plans in the Pacific Northwest Region (Region Six). The management direction includes invasive plant prevention and treatment/restoration standards intended to help achieve stated desired future conditions, goals and objectives. The management direction is expected to result in decreased rates of spread of invasive plants, while protecting human health and the environment from the adverse effects of invasive plant treatment. Goal 2, Practice 5 provides direction for cleaning industrial equipment entering National Forest Lands. Mitigation measures for invasive plants are in Section 4.5 Mitigation Measures.

1.8 Scoping and Identification of Issues

The Deschutes National Forest has not engaged in any consultation with any Tribes related to this project.

2.2 Alternative A - Proposed Project

Proposed Well Site TG12S
This site is located within Finley Mechanical Thinning/Brush Treatment Service Contract Unit 5 (169 acres) which is expected to be awarded in 2010 as funding allows. Recommendation: Appendix C of the drilling EA, which includes project design features and mitigations, needs to include a provision to coordinate timing of drilling to avoid conflicts with the Finley Service Contract.

2.2.1 – Site Preparation - In footnote 2 Forest Road 9736 is incorrectly associated with Site TG19N. As noted in Table 1, the correct road is 9735. Neither are Highway Safety Act Roads. TG29N is on Forest Road 9720, which is a Highway Safety Act Road. This is also incorrect in Appendix C

Pg 18 – "….piled next to the road, ***in already cleared areas***, to be sold." Delete "as biomass".

Pg 46 – TG12S is on Forest Road 2215-550.

Pg 48 – “designated OHV routes…. Not a designated route – describe as a “road open to OHV travel.”

5.4 List of Reviewers - Todd ***Reinwald***