

**U.S. DEPARTMENT OF ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY**

**FINDING OF NO SIGNIFICANT IMPACT
FOR
SILVER PEAK AREA GEOTHERMAL EXPLORATION PROJECT
ROCKWOOD LITHIUM CORPORATION
SILVER PEAK, NV**

RESPONSIBLE AGENCY: U.S. Department of Energy (DOE) in cooperation with U.S. Department of the Interior, Bureau of Land Management (BLM)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: The BLM and DOE have completed the *Silver Peak Area Geothermal Exploration Project Environmental Assessment* (DOI-BLM-NV-B020-0214 and DOE/EA-1921). Based on the analyses in the environmental assessment (EA), DOE and BLM have determined that there would be no significant adverse impacts associated with DOE's proposed action of awarding a federal grant to Rockwood Lithium Corporation (Rockwood) to partially fund the exploration for geothermal resources. The exploration would include the drilling of two observation wells and, if suitable conditions are found, the drilling and testing of up to four geothermal resource wells. The current project would not include the design, construction, or operation of a geothermal power plant. The goal of this project is to determine whether a suitable geothermal resource exists.

BACKGROUND: As part of the *American Recovery and Reinvestment Act of 2009* (Recovery Act; Public Law 111-5, 123 Stat. 115), DOE's National Energy Technology Laboratory (NETL), on behalf of the Office of Energy Efficiency and Renewable Energy's Vehicle Technologies Program, is providing up to \$2 billion in federal funding under competitively awarded agreements to facilitate the construction of U.S. manufacturing plants (including increases in production capacity at existing plants) that produce advanced batteries and electric drive components.

The DOE action of providing funding for these projects, known as the Electric Drive Vehicle Battery and Component Manufacturing Initiative, requires compliance with the *National Environmental Policy Act of 1969* (NEPA; 42 U.S.C. 4321 et seq.), the Council on Environmental Quality regulations (40 CFR Parts 1500 to 1508), and DOE's NEPA implementing procedures (10 CFR Part 1021). Previously, DOE prepared an EA to evaluate the potential environmental consequences of providing a grant to Chemetall Foote Corporation (Chemetall), predecessor to Rockwood, for specific improvements at the lithium brine extraction, evaporation, and processing facilities in Silver Peak, Nevada. A final EA and a FONSI (DOE/EA-1715) covering this earlier project work were issued and signed on September 22, 2010. For this independent project, DOE cooperated with the BLM on the preparation of an EA to evaluate the potential environmental consequences of DOE providing a grant for the proposed geothermal exploration. The BLM, by memorandum of agreement in March 2010 with DOE, was designated as the lead agency for the current EA.

PROJECT LOCATION AT SILVER PEAK, NEVADA

The proposed project would occur at Rockwood's Silver Peak facility in Clayton Valley near the town of Silver Peak in Nevada's Esmeralda County.

PURPOSE AND NEED: The overall purpose and need for DOE's action, pursuant to the Vehicle Technologies Program and the funding opportunity under the Recovery Act, is to accelerate the development and production of various electric drive vehicle systems through building or increasing domestic manufacturing capacity for advanced automotive batteries, battery components, recycling facilities, and electric drive vehicle components, in addition to stimulating U.S. economy. This and other selected projects are needed to reduce the U.S. petroleum consumption through investment in and deployment of alternative vehicle technologies. The proposed project would assist with the nation's economic recovery by exploring for geothermal resources that could be used to generate lower-cost electricity for processing lithium salts into commercial chemicals used in battery manufacturing (and job creation) in the United States in accordance with the objectives of the Recovery Act.

DESCRIPTION OF THE PROPOSED ACTION: DOE's proposed action is to provide approximately \$4.47 million via a financial assistance grant to partially fund the exploration for geothermal resources via the drilling of one observation well and up to two full-size geothermal wells on each of two drill pads and flow testing between these wells.

ALTERNATIVES CONSIDERED: In addition to the proposed project, BLM and DOE considered the no-action alternative as required under NEPA. Under the no-action alternative, DOE would not provide funds for the proposed project. For the purposes of the EA, DOE assumed that the project would not proceed without DOE's funding. This assumption establishes a baseline against which the potential environmental impacts of the proposed project are compared.

ENVIRONMENTAL CONSEQUENCES: BLM and DOE reviewed and considered the potential environmental consequences of the proposed project and the no-action alternative. BLM and DOE initially considered 32 potential environmental concerns and then gave further consideration to 14 of these concerns in the preparation of the EA. After consideration of the environmental effects of the proposed action as described in the EA and supporting documentation, it has been determined that the proposed action is not a major federal action that would significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. None of the environmental effects meet the definition of "significance" in context or intensity as described in 40 CFR 1508.27. Therefore, preparation of an environmental impact statement (EIS) is not required under section 102(2)(c) of NEPA.

PUBLIC AVAILABILITY: The Draft EA was distributed to appropriate state and federal agencies and the public for review and comment for a 15-day period as part of the NEPA process.

Copies of the final EA and this FONSI will be available on BLM's website at: https://www.blm.gov/epl-front-office/eplanning/nepa/nepa_register.do, and will also be available on DOE's NETL web site at: <http://www.netl.doe.gov/publications/others/nepa/ea.html>.

COMMENTS: During the public comment period, comments were received from four parties. Copies of the comments and responses are provided in Appendix C of the EA. The EA was revised to address several issues raised during the public comment period. In summary, there were concerns about the potential for drilling mud reserve pits to impact birds, the possibility for drilling-related impacts or geothermal resource utilization impacts on local fresh water supplies, visual/lighting impacts, the possibility of human health and safety impacts, the possibility of pollution-related impacts on near-by properties, and the sufficiency of the NEPA EA process. These have been considered and briefly addressed in Appendix C of the EA. The paragraphs below summarize the comments received.

The Nevada Department of Wildlife (the Department) requested additional actions to protect birds, especially for exposure to drilling fluids. The comment noted that reserve pit fluids contain substances that make them hazardous to birds. To mitigate the risks to birds, the Department stated that it preferred the use of closed baker tanks to hold drilling fluids. It also suggested pit-less drilling or closed-loop drilling techniques to reduce the opportunity for bird contact with these fluids. Alternatively, if the fluids are sent to an existing pond, the Department recommended monitoring, hazing, and wildlife rescue as means to reduce harm to birds and other wildlife. Because reserve pits remain a hazard after drilling is completed, the Department recommended closure of the pits no later than 30 days after cessation of drilling and testing activities.

The U.S. Environmental Protection Agency's (EPA) Region 9 noted that a quantitative estimate of potential air emissions should be made instead of a qualitative estimate in view of the existing air quality levels and potential for cumulative impacts. EPA was also unsure of whether pond and facility refurbishments funded previously by DOE would be occurring concurrently with the proposed geothermal exploration; if so, it recommended that the cumulative effects of these two projects be addressed.

The Nevada Division of State Lands (State Land Use Planning Agency) requested consideration of cumulative visual impacts from land development and suggested several mitigation measures: use of directional lighting instead of undirected lights; lighting plans that minimize usage and waste of lighting; consolidation of Federal Aviation Administration lighting with other lighting so as to minimize overall light emissions; use of building materials, screens, paint colors, and site placement so as to minimize visual impacts; and use of existing roads, utility corridors, and disturbed areas so as to minimize the disturbance of natural habitat.

Mr. Paul Rupp, a local resident, submitted two sets of documents, mostly indicating his concerns about the possibility of the proposed project impacting the local municipal water supply, his property, and community property. Mr. Rupp requested information on: the quantities of potable and non-potable water involved; the plans and design for the geothermal power plant that could be built after the proposed exploration project; the potential effects of barrier faults and other faults in the vicinity; the potential for brackish water encroachment on the fresh water aquifer and municipal water wells; the relationship between previous exploration activities and the proposed exploration activities; why Native American tribes were consulted before the local residents were consulted, and why they were given more time to participate; several resource areas (e.g., socioeconomics, noise, traffic, health, water supply, and pollution) that seemed to lack any or adequate coverage in the EA for both short-term effects and long-term effects; the

potential for spills or releases to affect Mr. Rupp's property or a local playground; agency consideration of Executive Order 13045 (Protection of Children from Health Risks and Safety Risks); whether the approval of the power plant is premature; and whether the current EA is inadequate for this approval. DOE has reviewed and considered all the information and comments submitted.

MITIGATION REQUIREMENTS:

The BLM required a number of mitigations under its drilling permit and its approval of Rockwood's operations plan, as well as stipulations in the geothermal lease. These mitigations will be monitored by BLM. DOE has considered these mitigations in its decision to issue this FONSI.

Under DOE's previous EA for the refurbishment of lithium brine production and processing facilities at Silver Peak, DOE conditioned its funding upon Rockwood (as successor to Chemetall) complying with several mitigations designed to protect the town of Silver Peak's water supply. DOE estimates that Rockwood's currently proposed geothermal exploration project will use up to 42 acre-feet of fresh water over the three-year life of the project from the local aquifer that serves both Silver Peak and the lithium processing plant of Rockwood. By mutual agreement of Rockwood and DOE, the same mitigations contained in the FONSI under DOE/EA-1715 are hereby adopted by reference and made a condition for DOE's funding of Rockwood's geothermal exploration project.

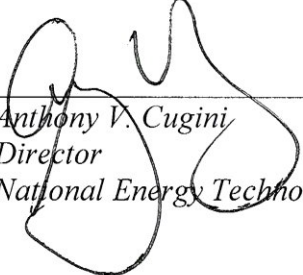
The following recommended mitigation measures were developed through the analysis conducted in this EA. By mutual agreement of Rockwood and DOE, Rockwood will employ the following mitigations during its geothermal exploration project:

- The drilling fluid (reserve) pits will maintain a minimum of two feet of freeboard at all times and will be closed as soon as practicable after the pits are not needed.
- Rockwood will use its existing bird protection program (i.e., monitoring, hazing, and bird rescue) and best efforts to protect birds from hazards associated with the drill fluid (reserve) pits and from hazards associated with any ponds and containers in which drilling fluids, test fluids, or produced fluids are contained.
- Wellhead equipment left on the drill site following the completion of drilling will be painted a color that blends with the landscape, pursuant to BLM Instructional Memorandum (IM) 2007-021 and the Gold Book (USDI and USDA 2007). Prior to paint selection, Rockwood will contact the Tonopah Field Office project lead for concurrence.
- Given the importance of maintaining dark sky conditions, conscious efforts will be made to protect against light pollution. All drill rig and facility lights will be limited to those required to safely conduct the operations and will be shielded and/or directed in a manner that directs light to the immediate work area.

DETERMINATION: On the basis of the evaluations in the final EA and subject to the mitigations imposed by BLM and DOE, DOE determined that no significant impact on the human environment would occur as a result of DOE's proposed action to provide a \$4.47 million federal grant and Rockwood's proposed project to explore for a geothermal resource that could

support the production of electricity that would serve the lithium processing plant owned by Rockwood. Therefore, preparation of an EIS is not required, and DOE is issuing this FONSI.

Issued in Pittsburgh, PA, this 20th day of December 2012.

 12.20.12

Anthony V. Cugini
Director
National Energy Technology Laboratory