

January 10, 2022

Via E-Mail [blm_nv_wdo_gerlach_geothermal@blm.gov]

Tia Subia
Project Manager
Mark E. Hall, PhD.
Field Manager
Black Rock Field Office
Bureau of Land Management
5100 E. Winnemucca Blvd.
Winnemucca, NV 89445

Re: NV088151X
3260 (NVWOI 0.28)
DOI-BLM-NV-W030-2022-000I-EA
Ormat Gerlach Geothermal Exploration Project

Dear Ms. Subia & Mr. Hall:

Burning Man Project submits the following comment regarding Ormat's Gerlach Geothermal Exploration Project referenced above (the "Project"). As stated by numerous concerned stakeholders in prescoping comments submitted to the last iteration of this Project, BLM should perform a thorough review under NEPA. Because of the possibility of significant and controversial impacts, we believe a full environmental impact statement ("EIS") should be prepared now to determine whether the Gerlach region is the appropriate location to construct the generating facility that Ormat will likely seek in a subsequent phase. While we understand that a programmatic EIS from 2008 exists, this document is outdated and not sufficiently detailed to address the concerns of stakeholders. Further, BLM intends to reference special studies performed through the Burning Man Project's 2019 Special Recreation Permit Renewal. While we appreciate the cost savings afforded to Ormat by BLM's use of special studies required of Burning Man Project during our EIS process, we are unaware of any regulation that would allow a project otherwise suitable for an EIS to then avoid the process. An EIS is certainly warranted here.

Overview:

Burning Man Project generally supports the expanded use of renewable energy sources in the resource mix for Northern Nevada, and geothermal resources are a viable source in the arid West. However, we also believe that adequate, consistent, and fair planning practices must be utilized in all projects of such importance in order to avoid unintended consequences. The proverbial “devil is in the details.” The Project proposes the installation of up to twenty-one exploration wells, with an overall disturbance area of approximately 50 acres. Each of the twenty-one well pads takes over two acres of land. See Operations Plan, October 2021, at 2 - 3. The Project’s “Area of Interest” surrounds Burning Man Project’s property, 360 acres that straddle State Route 34 (the “360 Property”) and include hot springs that Burning Man Project is in the process of developing for recreational use.¹ Burning Man Project has significant concerns, given severe impacts to springs caused by existing geothermal generation facilities, that similar impacts are likely to occur at the 360 Property upon the ultimate operation of a generating plant, if not sooner. The Area of Interest also lies approximately one mile outside of Gerlach proper, and even closer to individual homes of Gerlach residents. The Project proposes well drilling at depths between 1,500 and 7,000 feet and may include directional drilling to intercept geothermal targets under private property. *Id.* at 4.

An EA is not the appropriate vehicle to assess these potential impacts to surface and groundwater, and damage to both public and private land that could occur. While Ormat has reduced the scope of the Project from the development of the resource proposed last year, BLM should not allow Ormat to skirt an EIS by phasing its generation facility construction into “Phase 1 - this is just exploration”, and “Phase 2 - well, we’re already halfway there.” Of note, the National Renewable Energy Laboratory has examined projects such as the one proposed here under applicable NEPA timelines. NREL states that drilling projects such as this can equally fall under an EA or EIS analysis. *Geothermal Permitting and NEPA Timelines*, Young, *et. al*, GRC Transactions Vol. 38 (2014) at page 896, Table 2. While BLM intends to rely on Burning Man Project’s 2019 EIS special studies, it is not specified which studies will be utilized or how. Thus, current information available from Ormat and BLM appears to be incomplete.

¹ Attached to these comments is Burning Man Project’s Master Plan for development of the 360 Property.

Issues of Concern:

We find the following concerns with the Project based upon the information currently provided:

1. **National Conservation Area.** On December 21, 2000, the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Act of 2000 was signed into law. This important piece of legislation was decades in the making, and takes into account multiple uses and attributes therein that provide economic stability, cultural resource preservation, and significant habitat. The location of the Project so near to the NCA is one of significant concern, as expanded upon in the following paragraphs.
2. **Rural Economy.** The Operating Plan does not reflect any specific economic benefits to the Town of Gerlach and the surrounding region. Rather, it appears that the benefits will be minimal and possibly counterproductive. While Gerlach could benefit from modernized energy infrastructure, should Ormat ultimately be allowed to construct a geothermal plant there, it is unknown if the energy generated would even remain in the State of Nevada. Even if it did, customers of Sierra Pacific Power Company would only receive some generalized benefit from additional renewable resources coming on line, without specific planning between Ormat and NV Energy to address the aging transmission and distribution of the region, which currently still utilizes glass insulators.

There does not appear to be an influx of local jobs associated with the Project. The Operations Plan indicates that a maximum of 18 workers will be on site at a given drill pad location but states no preference for the employment of a local workforce. Operating Plan at 4. Moreover, as it stands, Gerlach suffers from a housing shortage. Ormat does not indicate how it might alleviate that problem, other than bringing in their own temporary trailer housing. *Id.*

Unintended consequences of the Project could also negatively impact businesses and landowners. Geothermal development in this region has the potential for significant impacts by altering or stopping existing surface springs from functioning, as discussed more fully below. Such impacts can harm local businesses. For example, should the hot springs located on Burning Man's property cease functioning, the commercial investment to develop the property would be thwarted.² And, if the Great Boiling Springs, located on neighboring private land, reduce or cease functioning, this would adversely impact the Black

² Burning Man Project is in the process of seeking approximately \$2 million in federal funding to help develop the 360 Property as a commercial enterprise supporting outdoor recreation and tourism, thereby strengthening the economy of the region. See also FN 1.

Rock Mud Company that relies upon its proper function. While we understand that the Project has been scaled down from development to exploration, the potential impacts to springs and groundwater should be examined early on in the process, with mitigation strategies in place should a plant ultimately be approved for construction.

Should the Project move toward development, considerations that could affect the local economy should be raised and addressed now. For instance, Ormat should address whether there are any pipeline alignments that will be requested to access private property, including Burning Man Project's 360 acres.

- 3. Tourism & Recreation.** Gerlach's economy significantly benefits from the tens of thousands of visitors from around the world who travel to this region year-round to experience the solitude of the vast open spaces and undeveloped vistas present in the Black Rock Desert, as well as attend numerous events and pursue a variety of recreation experiences. Even with the harmonious paint colors Ormat proposes, the number and location of the proposed well pads within this viewshed and sound range would negatively impact the experience of these tourists, and thus the vibrant tourism industry of Gerlach.

The Project overlaps a significant portion of the Granite Foothills Recreation Management Zone. The RMZ plan recognizes that *"national or regional visitors and constituents value the surrounding public lands as a recreation/tourism opportunity."* The BLM should do a detailed study to identify the scale of the Project impacts on the identified recreation values and on the socio-economic impact on regional tourism.

- 4. Habitat.** The Project has the potential to impact important wildlife habitat in a number of ways. If the likely geothermal plant development occurs, decreases in flow and temperature from springs hydrologically connected to the Project's geothermal resource may impact wetland habitat created by the springs. The 360 Property includes such valuable habitat. Wetlands in the desert are biodiversity hotspots, providing habitat for invertebrates, fish, resident and migratory birds, and a vital water source for larger terrestrial wildlife. The BLM should analyze in detail the potential changes in flow due to geothermal development to all potentially connected springs, and what the ecological consequences of such changes would be.
- 5. Dark Skies.** In an era of ever increasing urbanization and development, Dark Skies are becoming a rapidly diminishing resource. This has led to an exponential growth in the awareness of the values of preserving Dark Sky

landscapes and in the growth of Astro Tourism. Currently, Gerlach is a gateway community to the Dark Sky resources of the Black Rock High Rock NCA and the Massacre Rim WSA/ Dark Sky Sanctuary. This area is a popular viewing spot for people to view meteor showers, including the Perseids in August, and the Leonids in November.

In the 2021 legislative session, the Nevada Legislature passed [Senate Bill 52](#) which declared that dark sky areas “serve to specifically promote, preserve, protect and enhance Nevada’s dark sky resources for their intrinsic value and their ecological, astronomical, cultural and economic importance.” Further, the Legislature determined that “Designation of dark sky places in Nevada under the program will also attract tourists and other visitors to rural communities near Nevada’s dark sky assets, thereby generating increased economic activity for surrounding communities and their small businesses.”

The BLM should conduct a detailed study of the light pollution of the Project and how it will impact the dark sky brightness and interfere with opportunities for Astro Tourism and star gazing.

6. **Cultural Resources.** The Operations Plan notes that cultural resource surveys have been conducted; however, no detail as to the results of such surveys is noted. Operations Plan at page 11. The historic Nobels Trail and the exploration route of John C Fremont lie directly adjacent to the Project’s proposed location. There must be a thorough archeological survey of all prehistoric and historic resources located in the area.
7. **Noise Pollution.** With the Project located within a mile of Gerlach residences, it is critical that a Noise Analysis be completed through the NEPA process to identify the impacts to residents of noise from the Project, and the efficacy of Ormat’s suggested “one rock muffler” per drilling rig. *Id.*

In 2010, the World Geothermal Congress was presented with a [white paper](#) as to the efficacy of portable rock mufflers for well testing purposes. As to noise emissions, the authors stated, “The noise level recorded on this portable rock muffler is typically about 90 to 100 dBA at a radius of 5 m compared to the use of permanent rock muffler, which was about 80 - 90 dBA, while noise [World Health Organization] threshold is 85 dBA for 8 working hours/day. Noise measurement in the adjacent community was below 60 dB, as stated in geothermal environmental policy.” *Portable Rock Muffler Tank for Well Testing Purpose*, 2010, page 2.

The level to which a rock muffler, portable or permanent, can reduce noise to acceptable levels from well pads proposed on both the south and north borders

of the 360 Property appears to be insufficient. This commercial property is currently under development to include among other things campsites, modular housing, a cafe and community space. This constant noise associated with exploration wells may also be significantly disruptive to the serenity of public land users in the nearby National Conservation Area.

8. **Hydrology.** The Project area lies along the northeast trend of the Black Rock Geothermal area which includes many important hot springs resources. Geothermal development frequently causes substantial changes in the flow rates and flow paths in hydro geothermal systems which could alter existing surface flows at springs in the area. The BLM should do a detailed study of the connections among hot springs all along the trend noted above to estimate impacts, and set mitigation measures if appropriate. BLM should analyze the impact of development of geothermal resources on springs discharging from shallow groundwater systems. Impacts could occur if development changes the vertical gradient and causes water to flow downward from shallow groundwater significantly faster than currently occurs. While we recognize that these Impacts may occur in the future upon further development, they should still be identified now.

As to the planning phase of the Project, Ormat should be required to do the following, at a minimum:

- Test-hole mud-drilling exploration sites should avoid "targets" that could affect springs, wetlands, and wells within the Project vicinity.
- Directional-drilling beneath private property should not be allowed unless authorized by the property owners, given the site-specific conditions.
- Thermal studies show average heat flow and temperatures are affected in an area within roughly one mile around springs, or larger if the springs harvest heat flow over a larger area (Luijendijk, and others, 2020). These parameters should be taken into account.
- Springs with connections to habitat, wetlands, and potable groundwater resources in the Gerlach area are known to contain heavy metals, including arsenic and uranium at levels requiring treatment, which could become mobilized by incremental geochemical changes due to well drilling or long-term operations (temperature).
- There should be buffering/setbacks around springs, wetlands, habitat, well sites, and where geothermal and mineral lease rights areas of others reasonably could be affected. Ormat should be required to perform a hydrogeologic analysis to determine whether sensitive areas and private property are within the zone of influence of the proposed wells.

9. Groundwater Contamination. Groundwater contamination is possible with exploration well drilling. The Operations Plan includes a Spill or Discharge Contingency Plan that only appears to address spills or discharges to the surface of the ground. There is no plan as to what processes should be implemented should there be an unlawful discharge to groundwater. Any resulting regulatory obligation of Ormat should include a spill and discharge plan that specifically addresses groundwater contamination, and includes immediate notification to contiguous landowners, regardless of whether the Drilling Supervisor believes the spill affects their property. Operations Plan, page 14.

Ormat should provide the following pre-drilling and data collection in assessing this Project:

The well testing procedures can also cause potential impacts that need to be addressed by BLM. Specifically:

- There is potential for impacts to springs/habitat, wetlands, and private (domestic and/or geothermal) wells.
- Again, Ormat has not specified an adaptive management approach to address such impacts.

In the post-drilling and testing data phase, additional concerns arise:

- Ormat has not provided short- or long-term standard operating procedures for monitoring or for the remedy of impacts to springs/habitat or private wells/owners, given mud-drilling, directional-drilling, rock-fracturing, lost circulation and "blow-out" potential or other changes (flow, level, chemistry).
- It is not clear what would happen if the Project upends the heat flow wherein potable groundwater resources become non-potable or flow restricted. There must be a responsible party and process for replacing affected water supplies in the short- and long-term.
- The process must also specify how and where will habitat be mitigated in the Project vicinity if ecologic changes occur.

10. Net Energy Analysis. As part of the NEPA analysis, the BLM should conduct a Net Energy Analysis comparing the energy input with energy outputs for the Project.

11. Transportation Analysis. Burning Man Project is well aware of the potential impacts to local roads from increased traffic, as we perform detailed traffic analyses for BLM through our own EIS process. Increased traffic of heavy vehicles on State Route 447 could lead to an increased deterioration of the road surface. Thus, Ormat should be required to provide data and consult with the

Washoe County Roads Department to determine if the roadway rating and the Roads Department's maintenance schedule are adequate for the specific transportation needs of the Project.

Anyone who has ever driven along the roads in northern Washoe County near Gerlach have surely gazed in awe of the legendary landmark mountain massif called the Granite Range. Granite Peak leaps skyward some five thousand feet from the valley floor to the highest rampart. Granite Peak, at nearly 9,000 feet, is the highest point of this range which is also graced by the natural and historic landmark called "the Banjo". This range is often covered with snow year-round and it is one of the most revered mountain ranges in all of Nevada. As steward of land in the shadow of this range, and as an active member of the Gerlach community, Burning Man Project hopes that by these comments and others, BLM will ensure that this historic and coveted area is fully protected, and that renewable resources are appropriately sited for the benefit of all. We thank you for considering these important issues.

Sincerely,

Lina Tanner

Carolyn "Lina" Tanner
Senior Advisor, Government Affairs

ATTACHMENT A

BMP MASTER PLAN FOR 360 PROPERTY

