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Data Response Set 3 (Responses to Data Requests 1 to 9)

Submitted to
California Energy Commission

Prepared by
Black Rock Geothermal LLC

With assistance from
Jacobs

Black Rock Geothermal Project
(23-AFC-03)
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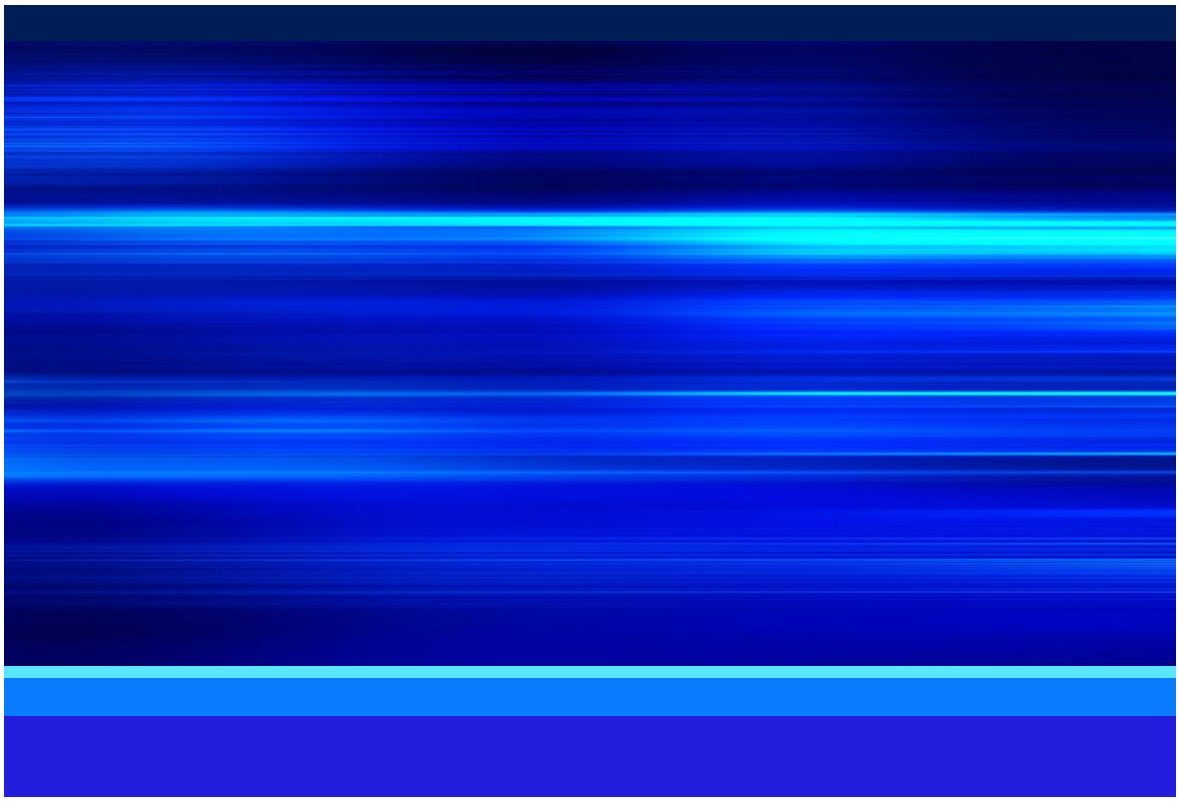

Introduction

Attached are Black Rock Geothermal LLC's[1] (Applicant) responses to the California Energy Commission's (CEC) *Data Requests Set 3* regarding the Application for Certification (AFC) for the Black Rock Geothermal Project (BRGP) (23-AFC-03). This submittal includes a response to Data Requests 1 through 9.

The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as presented *Data Requests Set 3* and are keyed to the Data Request numbers.

New or revised graphics or tables are numbered in reference to the Data Request number. For example, the first table used in response to Data Request 28 would be numbered Table DR28-1. The first figure used in response to Data Request 28 would be Figure DR28-1, and so on. Figures or tables from the BRGP AFC that have been revised have a "R" following the original number, indicating a revision.

Additional tables, figures, or documents submitted in response to a data request (for example, supporting data, stand-alone documents such as plans, folding graphics, etc.) are found at the end of each discipline-specific section and are not sequentially page numbered consistently with the remainder of the document, though they may have their own internal page numbering system.

[1] An indirect, wholly owned subsidiary of BHE Renewables, LLC ("BHER").

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Acronyms and Abbreviations

AFC	Application for Certification
BRGP	Black Rock Geothermal Project
CalGEM	California Department of Conservation, Geologic Energy Management Division
CEC	California Energy Commission
DR	Data Request
ENGP	Elmore North Geothermal Project
MBGP	Morton Bay Geothermal Project
TN	Transaction Number
WDRs	water discharge requirements

1. Cultural and Tribal Cultural Resource (DR 1-4)

Background: Required Activities for Permanent Closure (DR 1-4)

The Application for Certification (AFC) state that the applicant would prepare a detailed permanent closure plan 12 months prior to decommissioning to include:

- *Identification of closure activities*
- *A discussion of relevant laws, ordinances, regulations, and standards (LORS), and actions necessary to conform to LORS*
- *Plans for recycling and disposing of material generated during decommissioning*
- *Plans for site security*
- *Standards for well closure*
- *Standards for closing brine ponds (Jacobs 2023a, page 2-49.)*

To provide a comprehensive impact assessment under the California Environmental Quality Act, staff requires additional information about permanent power plant closure, as specified below.

Data Requests:

1. *Please describe how you anticipate handling the concrete foundations of demolished buildings and structures. For example, would decommissioning crews remove the foundations altogether, grind the foundations to finished (post-decommissioning) grade, or leave the foundations in place?*

Response: At the time the permanent closure plan is prepared, the Project Owner will identify any future planned usage for the site and whether any buildings, structures, or foundations will be retained for reuse or removed. Therefore, it is speculative at this time to state whether foundations will be removed, left in place, or ground to a finished grade. As described in Section 2.3.6.2 of the AFC, a permanent closure plan will be developed and submitted to the CEC for review at least 12 months prior to planned facility closure. The permanent closure plan will ensure that permanent closure is conducted in compliance with then-applicable laws, ordinances, regulations, and standards.

2. *What are the anticipated physical activities required to close the various wells associated with the Black Rock Geothermal Project (BRGP)?*

Response: Upon permanent closure of the facility the wells will be abandoned in accordance with applicable laws, ordinances, regulations, and standards. As described in Section 2.3.6.2 of the AFC, the Applicant currently expects that the wells will be abandoned in accordance with the procedures prescribed by the California Department of Conservation, Geologic Energy Management Division ("CalGEM"). The physical activities may include using cementing operations to plug the well and isolate it from the geothermal reservoir.

3. *What are the anticipated physical activities required to close the brine pond and other surface impoundments associated with the BRGP?*

Response: Upon permanent closure of the facility the brine pond and other surface impoundments will be closed in accordance with applicable laws, ordinances, regulations, and standards. As described in Section 2.3.6.2 of the AFC, the Applicant expects that the brine pond will be "clean closed" in accordance with the Colorado River Regional Water Quality Control Board waste discharge requirements ("WDRs"). Based on

current procedures, the Applicant expects that physical activities to clean close the brine pond may include:

- Removal and disposal of free liquids and brine solids in the pond.
- Removal and disposal of pond liner system components, including fiber reinforced concrete, flexible membrane liners, and compacted soil layers.
- Removal and disposal of accessory structures associated with the pond, including ancillary piping within the pond footprint.
- Decommissioning of groundwater monitoring wells and leachate collection system.
- Confirmation sampling for subgrade soils to confirm clean closure.

Upon completion of clean closure, a closure certification report will be prepared and submitted to the Colorado River Regional Water Quality Control Board for approval documenting the closure activities and removal of residual wastes, including liquids, settled solids, and liner materials, and potentially contaminated soils.

4. *Describe the anticipated closure activities associated with underground utilities associated with the BRGP.*

Response: At the time the permanent closure plan is prepared, the Project Owner will identify any future planned usage for the site and whether any underground facilities will be retained for reuse, removed, or abandoned in place. Therefore, it is speculative at this time to state what the anticipated closure activities for underground utilities are. As described in Section 2.3.6.2 of the AFC, a permanent closure plan will be developed and submitted to the CEC for review at least 12 months prior to planned facility closure. The permanent closure plan will ensure that permanent closure is conducted in compliance with then-applicable laws, ordinances, regulations, and standards.

Background: Relocation of the Morton Bay Power Plant and Shared Project Features (DR 5-6)

The applicant indicated that it is redesigning the layout of the proposed Morton Bay Geothermal Project (MBGP) so that the power plant itself would be situated about 915 feet south/southwest of its original, proposed location (Jacobs 2023bb page 5-6). The relocated MBGP power plant would be within one of the construction laydown and parking areas identified for use during construction of the proposed BRGP, ENGP, and MBGP (Jacobs 2023a, Figures 1-4, 5.3-1a).

Data Requests:

5. *With the relocation of the MBGP power plant site, would the former power plant site be available for use as a construction laydown and parking area for construction of the BRGP?*

Response: Yes. The Morton Bay Geothermal Project General Arrangement Refinement submittal (TN 253188) Figure 1-4R shows the portions of the parcel proposed to be used for laydown/parking.

6. *If the former MBGP power plant site would not be available for use as a construction laydown and parking area for construction of the BRGP, is one or more alternative construction laydown and parking area necessary to replace it?*

Response: Please see the response to Data Request (DR) #5.

2. Efficiency and Energy Resources (DR 7)

Background: Project Lifespan (DR 7)

Throughout the AFC, there are inconsistencies regarding the project's lifespan. In several sections of the AFC, the expected project lifespan is indicated as 40 years (TN 249752, Sections 2.1, 2.3.5.1). Yet, in one other section of the AFC, the expected project lifespan is projected to be 30 years (TN 249752, Section 5.9.3.4.1).

For staff to complete the preliminary staff assessment for the project, staff needs clarification on the expected lifespan of the project.

Data Requests:

7. Please clarify whether the project's expected lifespan is 30 years or 40 years.

Response: The BRGP is expected to have a 40 year lifespan.

3. Land Use, Agriculture, and Forestry (DR 8-9)

Background: Borrow Sites (DR 8)

The application shows in Figure 5.11-2 that some of the potential borrow sites are on areas designated by the Farmland Mapping and Monitoring Program as Important Farmland, including Prime Farmland. Section 5.11.2.2.7 of the application discusses the restoration of borrow pits after excavation with the original topsoil to preserve the soil characteristics of the borrow pit sites. However, avoiding any disturbance of this land is preferable in terms of agricultural impacts.

Data Requests:

8. *To avoid disturbance of Important Farmland, is it possible to relocate the borrow pits to sites not designated as Important Farmland, especially Prime Farmland? Please discuss whether this is possible, and if not, state the reasons why.*

Response: Most of the borrow pits proposed for the project site have not been farmed in the last 5 years (see TN# 253620). A portion of one borrow pit has been farmed within the last 5 years (the eastern portion of Assessor Parcel Number 020-100-036) and will be avoided to the extent feasible.

Background: Reconfiguration to Avoid Prime Farmland (DR 9)

The application shows in Figure 5.11-2 that the northwest corner of the project plant site is designated as Prime Farmland by the Farmland Mapping and Monitoring Program. Prime Farmland is considered the highest quality for farming.

Data Requests:

9. *Is it possible to reconfigure the project components on the plant site to avoid or minimize the permanent conversion of Prime Farmland? Please discuss whether this is possible, and if not, state the reasons why.*

Response: The BRGP was sited along the eastern edge of the parcel in an attempt to avoid the Prime Farmland on the western side of the parcel, keeping the overall impacts minimized. Any modifications to the plant layout that force a non-linear or orthogonal arrangement will have other non-intended impacts including, but not limited to, an overall larger plant footprint and commensurate impacts.