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CALIFORNIA ENERGY COMMISSION

CALIFORNIA NATURAL RESOURCES AGENCY

January 12, 2024

Jon Trujillo
GM, Geothermal Development
BHE Renewables
74-710, CA-111, # 102
Palm Desert, California 92260

Data Requests Set 4 for Morton Bay Geothermal Project (23-AFC-01)

Dear Jon Trujillo:

Pursuant to Title 20, California Code of Regulations, section 1716, California Energy Commission (CEC) staff is asking for the information specified in the enclosed Data Requests Set 4, which is necessary for a complete staff analysis of the Morton Bay Geothermal Project under the Warren-Alquist Act and California Environmental Quality Act.

Responses to the data requests are due to staff within 30 days. If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send written notice to me and the Morton Bay Geothermal Project AFC Committee within 20 days of receipt of this letter. Such written notification must contain the reasons for not providing the information, the need for additional time, or the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)).

If you have any questions, please email me at eric.veerkamp@energy.ca.gov.

_____/S/_____

Eric Veerkamp
Project Manager

Enclosure: Data Requests Set 4

ALTERNATIVES

Authors: Jeanine Hinde, Kenneth Salyphone, James Ackerman, Adam White

BACKGROUND: POWER PLANT COOLING ALTERNATIVE

The Morton Bay Geothermal Project (MBGP) would require approximately 5,560 acre-feet per year (AFY) from the Imperial Irrigation District (IID) canal. Water taken from the IID Canal for the MBGP and the Elmore North and Black Rock geothermal projects would total approximately 13,000 AFY.

In Data Request Set 1, CEC staff requested an analysis of an augmented cooling system alternative for the MBGP, 140-MW baseload generating facility. In the data response, the applicant states that the alternative is infeasible "due to plant performance impacts, additional land usage required, and auxiliary power requirements" (Morton Bay Geothermal 2023a). (The 63-acre plant site is located on a 160-acre parcel [APN 020-100-007] where the applicant has site control.) The applicant states that compared to a wet cooling tower, an augmented cooling system would require additional auxiliary power, causing a lower gross output and a less efficient facility. The applicant states that the alternative cooling system would greatly increase project costs.

On November 10, 2023, the applicant filed revised responses to several data requests from Data Response Set 1 for the MBGP, including an update to the Best Available Control Technology (BACT) evaluation for cooling tower particulate matter (PM) emissions. Air-cooled condensers (ACCs) with evaporative pre-cooling are among the PM abatement options in the BACT analysis update (Morton Bay Geothermal 2023b).

The analysis states that ACC systems in higher temperature regions of California are expected to experience reduced efficiency. Heat balance case studies for the Elmore North Geothermal Project show that when temperatures are 100°F and higher, expected power output with an ACC would be 15 percent lower than with a wet cooling system. And it states that although evaporative pre-cooling could help mitigate this effect, project costs and the parasitic load of the process would increase. The three proposed geothermal projects are being designed as flash steam systems. By comparison, the analysis states that "ACCs are often implemented for binary geothermal plants, which are lower temperature systems requiring less cooling demand…." The analysis concludes that "based on the lack of demonstration of commercial ACCs on non-binary geothermal power plants, [i.e., flash systems] [an ACC with evaporative pre-cooling] is not considered technically feasible.…" The BACT proposed for cooling tower PM abatement for the three projects remains wet cooling with drift eliminators.

DATA REQUESTS

1. Please provide details on the effects of a pre-evaporative cooling alternative with an ACC system on power plant efficiency and net generating capacity.

2. Please provide the heat and mass balance diagram for a pre-evaporative cooling alternative with an ACC system for the project site for temperatures of 100°F and higher.
3. Please provide justification for why reducing generating capacity is an infeasible alternative for this project when considering this alternative cooling system.
4. Please provide details on how the equipment requirements and the projected loss in efficiency and net generating capacity for this alternative cooling system would impact project costs and profitability.
5. Please provide details on the acreage requirement for this alternative cooling system and how the additional equipment might be configured on the project's 160-acre parcel. Please explain the specific impacts of a larger footprint to accommodate the alternative cooling system.
6. Please estimate the operational water use requirements for this alternative cooling system.

BACKGROUND: INCREASED EFFICIENCY OF WATER CONSUMPTION AS A POTENTIAL ALTERNATIVE

During the August 31, 2023, CEC Joint Environmental Scoping Meeting and Informational Hearing for the three proposed geothermal projects, Chair David Hochschild asked the applicant's representative, Jon Trujillo, about improvements in water use efficiency. Trujillo described the challenge of controlling the dilution water required to manage the dissolved solids and salts in the geothermal fluid. He stated that the applicant is looking at alternative methods and every viable efficiency. Commissioner Andrew McAllister asked whether there is value in the mineral resources dissolved in the brine, and if so, would exploiting those resources decrease power plant water requirements. Trujillo responded that it depends on the technology developed to recover the minerals and suggested that without more information on the selected technology, it is too speculative to determine the impact on water use (CEC 2023, TN 252500).

Chair Hochschild asked Alicia Knapp, CEO of BHE Renewables, about the prospect of eventually co-locating lithium production at the three geothermal power plant facilities. Knapp responded that separate from the geothermal projects, the applicant is testing technology to recover lithium from the brine. Knapp explained that a lot of work remains before the applicant knows whether lithium extraction can be done in an environmentally sustainable manner while being economically feasible.

DATA REQUESTS

7. Please explain any work being done to evaluate methods to increase efficiency of water consumption in the geothermal fluid production cycle for the proposed project. If such work is occurring, please estimate when preliminary results will be available.

8. Regarding testing technology on lithium production, please describe whether the applicant is assessing processes for increasing efficiency of water consumption and when analysis results might be available.
9. Please provide any scientifically supported information regarding water use requirements for geothermal power production with and without lithium extraction.

BACKGROUND: ALTERNATIVE PROJECT SITES

In Data Request Set 1, staff requested information on other potential sites that were considered for the MBGP. In the data response, the applicant lists several properties that were evaluated as potential sites before being rejected due to greater environmental impacts and related construction challenges (Jacobs 2023a, TN 249723). Among other reasons, the applicant states that the "MBGP site was ultimately chosen because of the presence of adequate geothermal resources, in terms of heat flows, to support the proposed generating capacity of the facility…." Site selection was filtered to avoid or reduce impacts on sensitive resources and by accessibility and land use considerations. Parcel ownership and availability were also considered for final potential siting locations. The applicant and its affiliates hold the mineral and geothermal interests on many of the properties that were considered for the MBGP (Morton Bay Geothermal 2023c, TN 249723).

DATA REQUESTS

10. Please state whether the applicant owns or otherwise has an option to purchase other properties in the Salton Sea Geothermal Reservoir (except for the Black Rock and Elmore North sites). Please provide the assessor's parcel number(s) for any such properties.
11. Please explain the rights conveyed by the mineral and geothermal leases for properties in the Salton Sea Geothermal Reservoir compared to those conveyed by site ownership.

REFERENCES

CEC 2023 – California Energy Commission (TN 252500). Transcript of August 31, 2023, Joint Environmental Scoping Meeting and Informational Hearing, pages 58–59 and 69–71, docketed October 4, 2023. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-AFC-01

Morton Bay Geothermal 2023a – Morton Bay Geothermal LLC (TN 252491-1). Data Response Set 1, Alternatives (DR 16–18), docketed October 2, 2023. Prepared with technical assistance from Jacobs Engineering. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-AFC-01

Morton Bay Geothermal 2023b – Morton Bay Geothermal LLC (TN 253082). Data Response Set 1, Revised Responses, Appendix 5.1E Basis of BACT Determination, docketed November 13, 2023. Prepared with technical assistance

from Jacobs Engineering. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-AFC-01

Morton Bay Geothermal 2023c – Morton Bay Geothermal LLC (TN 249723). Application for Certification Morton Bay Geothermal Project, docketed April 18, 2023. Prepared with technical assistance from Jacobs Engineering. Subsection 2.3.2.2 Project Site Selection, Figure 2-3. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-AFC-01

AIR QUALITY

Author: Wenjun Qian, Ph.D., P.E.

BACKGROUND: DIESEL ENGINE EMISSIONS AND IMPACTS

The Morton Bay Geothermal Project Data Request Response Set 1 (Revised Responses to Data Requests 3, 4, 7, 10 to 13, and 73 to 77) (TN 253082) states that the project would use one Tier 3-certified fire pump and three Tier 4-certified emergency generators (collectively, the Units). In the emission estimation and impacts analysis, the applicant used vendor data for the Tier 3 fire pump and assumed Tier 4 emissions for the emergency generators. However, based on experience analyzing data center projects, staff understands that normally the selective catalytic reduction (SCR) for the Units needs time to warm up before it can reach full NOx control effectiveness. Therefore, worst-case hourly NOx emissions would include uncontrolled emissions during the warm-up period and controlled emissions for the rest of the hour. CEC staff needs engine manufacturer and emissions control device specifications sheets to verify the emission rates used by the applicant. Staff also needs clarification on whether the applicant would test the engines concurrently or only one engine at a time during a single hour.

DATA REQUESTS

12. For the Units, please provide up-to-date manufacturer specification sheets showing engine and emissions control system performance specifications. This information should identify uncontrolled and controlled emissions and the warm-up time for the SCR to reach full effectiveness.
13. For the Units, please update the NOx emissions estimation and NO_2 impacts modeling analysis to account for uncontrolled emissions during the SCR warm-up period and controlled emissions for the rest of the hour.
14. Please clarify whether the engines used by the Units would be tested concurrently or only one at a time during a single hour.

BIOLOGICAL RESOURCES

Author: Andrea Stroud

BACKGROUND: PRODUCTION WELLS AND PADS

Per the AFC (TN249723), Executive Summary, Project Elements, proposed construction of the Morton Bay project would include nine production wells on six well pads. As shown on Figure 1-4 (TN249723) and Figure 1-4R (TN 253188), the production wells and pads are located north and west of the project site and occur in areas nearest to the Salton Sea and Morton Bay. These areas have historically and episodically been inundated with water long enough to support the growth of emergent wetland vegetation. Based on a review of Google Earth Pro images from 1985 to present, these areas were under water for the following months and years: Dec. 1985; June 1996; May 2002; June, Aug. and Dec. 2005; Jan. and Aug. 2006; Feb. 2008; June 2009; May and June 2012; Mar. 2014; Mar. 2015; and Oct. 2016.

CEC biological resources staff, the U.S. Fish and Wildlife Service, and the California Department of Fish and Wildlife are concerned with characterizing and managing the changing conditions of these areas where the production wells and pads are to occur. Listed species such as the desert pupfish (state and federally endangered) and Yuma Ridgeway's rail (federally endangered, state threatened, and state Fully Protected species) are known to occur in the area where these structures are proposed to be located. "Fully Protected" species are those for which no incidental take may be authorized (Fish and Game Code Sections 3511, 4700, 5050 and 5515). The source of the water for these areas is primarily the Imperial Irrigation District canals and drains, which convey rain and agricultural runoff. Staff is concerned that if/when these areas become inundated, listed species may be present and experience incidental take. This may therefore necessitate a Section 7 Incidental Take Permit, and/or complete avoidance, as in the case of the Yuma Ridgeway's rail. The permit process may be lengthy, and it is recommended the applicant begin that process early, if necessary.

As of October 2, 2023, both the project site and the area immediately north of the project site, where two well pads would be located, were inundated with water (Source: Sentinelhub).

DATA REQUESTS

15. Please provide background on the reasoning for the placement of the production wells. Are there alternative location(s) for these production wells outside these areas of historic inundation. Were alternative locations considered, and if so, why were they dismissed?
16. Please provide measures that will be implemented if the areas for the production wells are inundated at the onset of construction.

17. Are there physical or engineering structures that would/could be constructed to prevent inundation of the production wells in the future, after completion of construction?

LAND USE

Author: Steve Kerr

BACKGROUND: CONSULTATION WITH UNITED STATES DEPARTMENT OF DEFENSE

Review of the California Military Land Use Compatibility Analyst (CMLUCA) mapping tool maintained by the Governor's Office of Planning and Research (OPR) indicates the proposed project is in an area designated as Military Special Use Airspace – Military Operation Area (MOA). The CMLUCA mapping tool and notification list can be accessed via OPR's Military Affairs webpage here: https://opr.ca.gov/planning/land-use/military-affairs/

Additional geospatial information for U.S. Military Installations, Ranges, and Training Areas (MIRTA) can be accessed at the Defense Installations Spatial Data Infrastructure webpage: https://www.acq.osd.mil/eie/bsi/bei_disdi.html

Review of the MIRTA Map Viewer (site managed by U.S. Army Corps of Engineers) shows, like the CMLUCA, the project site is within Special Use Airspace – Low Altitude – MOA, in addition to being beneath Military Training Route – Visual and Military Training Route corridor – Visual.

The following is excerpted from the Warren-Alquist Act, Public Resources Code, section 25519.5:

(a) If the site and related facilities specified in the application are proposed to be located within 1,000 feet of a military installation or lie within special use airspace or beneath a low-level flight path, as defined in Section 21098, the applicant shall inform the United States Department of Defense of the proposed project and that an application will be filed with the commission.

(b) If provided by the United States Department of Defense, the applicant shall include within the application a description of its consultation with the department, with regard to potential impacts upon national security, including potential impacts on the land, sea, and airspace identified by the United States Department of Defense and its impacted service components, for conducting operations and training, or for the research, development, testing, and evaluation of weapons, sensors, and tactics. If the information is provided after the application is filed, the applicant shall forward the information upon receipt.

DATA REQUESTS

18. Please provide confirmation that the applicant has informed the United States Department of Defense (DOD) of the proposed project because the project appears to lie within special use airspace and beneath low-level flight path. DOD contact information and request form for project review is available at: https://www.dodclearinghouse.osd.mil/
19. If provided by the DOD, please file upon receipt a description of the applicant's consultation with the DOD, with regard to potential impacts upon national security, including potential impacts on the land, sea, and airspace identified by the DOD and its impacted service components, for conducting operations and training, or for the research, development, testing, and evaluation of weapons, sensors, and tactics.

SOLID WASTE

Author: James Ackerman

BACKGROUND: SCHEDULE OF DESERT VALLEY COMPANY MONOFILL CELL 4 EXPANSION

According to the Solid Waste Information System (SWIS) website (CalRecycle 2023, https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/4194?siteID=606), the Desert Valley Company Monofill (DVCM) has a remaining capacity of 789,644 cubic yards (cy) and is permitted through January 31, 2025. According to the applications for the Morton Bay, Elmore North, and Black Rock geothermal projects, an estimated 62,000 tons of filter cake produced from geothermal brine would be generated annually from these facilities. Using a filter cake density of 2.0 grams per cubic centimeter (Owen et al. 1979, https://www.osti.gov/servlets/purl/5696613), the 62,000 tons per year would convert to approximately 36,783 cy per year. Over the anticipated 30-year project period, the estimated total filter cake (1,103,490 cy) would represent 140 percent of the remaining reported DVCM capacity. In addition, the facility is due to close in January 2025 without the proposed DVCM Cell 4 expansion (BRG Consulting 2021, https://www.icpds.com/assets/GPA18-0004-ZC18-0005-CUP18-0025-DVC-Draft-EIR-.pdf). As the DVCM facility is local and uniquely permitted to receive filter cake waste, its continued operation would benefit the proposed geothermal projects.

DATA REQUESTS

20. Please provide information regarding the estimated completion of the DVCM Cell 4 expansion and whether and how this would affect geothermal filter cake disposal for the proposed geothermal project.
21. Please identify an alternate disposal option for the geothermal filter cake from each location if the DVCM Cell 4 expansion is not completed or remains inadequate in time for project operation.

REFERENCES

BRG Consulting 2021 – BRG Consulting, Inc. (BRG Consulting). Draft Environmental Impact Report Vol. 1, Desert Valley Company Monofill Expansion Project, Cell 4. Prepared for the Imperial County Planning and Development Services Department. July 2021. Accessed on November 2, 2023. Available online at: https://www.icpds.com/assets/GPA18-0004-ZC18-0005-CUP18-0025-DVC-Draft-EIR-.pdf

CalRecycle 2023 – California Department of Resources Recycling and Recovery (CalRecycle). Monofill Facility (SWIS Facility No 13-AA-002), SWIS Facility/Site Activity Details website. Accessed on November 2, 2023. Available online at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/4194?siteID=606

Owen et al. 1979 – L.B. Owen, E. Raber, C. Otto, R. Netherton, R. Neurath, and L. Allen (Owen et al.). An Assessment of the Injectability of Conditioned Brine produced by a Reaction Clarification - Gravity Filtration System in Operation at the Salton Sea Geothermal Field, Southern California. Lawrence Livermore Laboratory, UCID -18488. November 28, 1979. Accessed on November 8, 2023. Available online at: https://www.osti.gov/servlets/purl/5696613

WATER RESOURCES

Authors: James Ackerman and Adam White

BACKGROUND: WATER SUPPLY ASSESSMENT

In response to Data Request Set 1, Data Request 99, the applicant submitted a draft Water Supply Assessment (WSA) in accordance with Senate Bill (SB) 610. CEC staff is concerned about the Imperial Irrigation District's (IID's) ability to provide reliable water supply to the MBGP as well as the Elmore North and Black Rock geothermal projects during normal periods, as well as single and multiple-year dry periods, throughout the life of the projects. This is due to the combined annual operational water demand for the three proposed geothermal projects of approximately 13,165 AFY, which comprises approximately two-thirds of the remaining 19,620 AFY available non-agricultural set-aside under IID's Interim Water Supply Policy (IWSP) (IID 2009).

BACKGROUND: WSA – LEAD AGENCY DESIGNATION

The first section of the WSA, Purpose of Water Supply Assessment, identifies the lead agency as Imperial County Planning & Development Services.

DATA REQUEST

22. Please revise the WSA to identify the CEC as the lead agency under the California Environmental Quality Act (CEQA).

BACKGROUND: WSA – IMPACT OF PROJECT WATER DEMAND TO IID

The Executive Summary of the WSA (Page iii) states; "Thus, the proposed Project's estimated water demand, combined with other development anticipated in the area is likely to adversely affect IID's ability to provide water to other users in IID's water service area."

DATA REQUEST

23. Please explain how this observation would be mitigated by IID to ensure water supply to the proposed geothermal projects and existing agricultural users would be provided.

BACKGROUND: WSA – IMPACT OF VOLUNTARY WATER CONSERVATION

The Executive Summary of the WSA (Page iv, paragraph 2) states; "IID has gone on record that its share of the California proposal under a voluntary plan would not exceed 250,000 AFY as long as there are no obligatory reductions imposed."

DATA REQUESTS

24. Please explain how and to what extent potential water reduction and the voluntary conservation measure would impact water supply to the proposed geothermal projects.
25. Please explain how possible delivery reductions that could result from revisions to the Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead (2007 Interim Guidelines) would be addressed and what impact this could have on the proposed geothermal projects' water supply.

BACKGROUND: WSA – EFFICIENT WATER USE

Section 1, Project Description of the WSA (paragraph 4, Page 1-2) describes proposed Best Management Practices (BMPs) for water use efficiency such as: use of fresh water supplied by IID shall not exceed the agreed-upon amount. In addition, it states that the project will comply with California Water Code (CWC) Section 461.

DATA REQUESTS

26. Please explain how not exceeding the agreed-upon amount of fresh water will result in water use efficiency. Please discuss alternate BMPs that would result in verifiable water use efficiency.
27. Please correct the link and URL included in Section A5 of Appendix A directing the user to the WikiHome, Bathroom Home Improvement webpage, not the California Urban Water Conservation Council BMPs. The California Urban Water Conservation Council BMPs have been archived at the following URL: https://calwep.org/our-work/conservation/bmp-guidebooks/

28. Please provide information on how the project would use reclaimed water to satisfy beneficial water use per CWC Section 461.

BACKGROUND: WSA – PROPORTIONATE WATER DEMAND REDUCTION

Section 1 of the WSA (paragraph 5, Page 1-2) states; "the MBGP may be required to reduce its water supply demand by a proportionate reduction of the total volume of water available to IID."

DATA REQUEST

29. Please explain how the proportionate reduction would be determined for water users and how this could specifically impact the proposed geothermal projects' water supply.

BACKGROUND: WSA – CONTRADICTORY STATEMENTS CONCERNING FUTURE WATER DEMAND

Section 1.4 of the WSA (Page 1-11) states: "long term water supply augmentation is not anticipated to be necessary to meet proposed project demands." However, Section 6.1 of the WSA (Page 6-2) states: "Given the prolonged drought conditions and recent communication from the Department of the Interior, reductions to all basin contractors, including IID, are increasingly likely. These two statements seem to contradict each other. Also, the second statement indicates that the likelihood of water supply reduction in the future is high."

DATA REQUEST

30. Please describe how the project would manage water supply reductions and what measures would be taken to address delivery shortages over the life of the project.

BACKGROUND: WSA – IWSP CONSERVATION MEASURES

Section 1.5 IID Interim Water Supply Policy [IWSP] for Non-Agricultural Projects (September 2009) of the WSA (first paragraph, Page 1-13) describes how the IWSP designates up to 25,000 AFY to be conserved from IID's annual Colorado River supply. Based on the explanation in Section 1.6, part of this designation is achieved through the Temporary Land Conversion Fallowing Policy (TLCFP). However, other conservation measures that contribute to the 25,000 AF annual designation are not specified in the IWSP.

DATA REQUEST

31. Please describe the other means of water conservation that account for the 25,000 AF annual designation.

BACKGROUND: WSA – AVAILABILITY OF NON-AGRICULTURAL PROJECT SET-ASIDE

The last paragraph of Section 1.5 of the WSA (Page 1-14) states: "As of May 2023, IID has issued two water supply agreements under the IWSP that total 5,380 AFY, leaving a balance of 19,620 AFY of potential water supply available for additional contracting under the IWSP." Therefore, the estimated operation water demand for all three proposed geothermal projects of 13,165 AFY constitutes about 67 percent, or two-thirds, of the non-agricultural project water supply available in the IWSP program.

DATA REQUEST

32. Please explain how IID would provide water demand if other competing projects demand more than the remaining 33 percent of the available IWSP water supply prior to the project possibly being certified.

BACKGROUND: WSA – CLARIFICATION OF THE IWSP FEE SCHEDULE

In Table 8 of the WSA (Section 1.5, Page 1-14) the highest tier included in the IWSP fee schedule is defined as customers with a demand between 2,501 and 5,000 AFY. The annual estimated water demand for both the Elmore North and Morton Bay geothermal projects (6,480 AF and 5,560 AF, respectively) exceed the upper limit of the highest tier.

DATA REQUEST

33. Please clarify if these projects would be included in the highest tier of Table 8 or if a new tier would be created.

BACKGROUND: WSA – ASSOCIATION OF WATER CONSERVATION WITH IWSP

Section 2.2.6 of the WSA (paragraph 4, Page 2-3) states that IID will receive billions of dollars for the water they conserve as part of the Quantification Settlement Agreement (QSA) and Transfer Agreements.

DATA REQUEST

34. Does the water conservation that IID will receive payment for include the conservation to support the IWSP program?

BACKGROUND: WSA – ANALYSIS OF DRY YEAR WATER AVAILABILITY

Section 3 of the WSA (Page 3-1) states that analysis for multiple dry years required for SB 610 is not applicable since water availability from IID is not dependent on local rainfall and would not differ between normal and dry years. However, the lack of regional precipitation over the greater Colorado River basin could affect the Colorado River flows and as a result IID's allocation of water supply.

DATA REQUESTS

35. Please consider a revision to Section 3 to recognize that regional weather patterns could impact IID's water supply.

36. Please revise Section 3 to note that this topic is also addressed in Section 5.

BACKGROUND: WSA – CLARIFICATION OF EDP CLEARINGHOUSE

Section 5.1 of the WSA (Page 5-4) states: "The Revised 2022 EDP also establishes a water exchange clearinghouse to facilitate the movement of water supply between all water users and water user categories. Water user categories identified in the Equitable Distribution Plan (EDP) are 1) agricultural, 2) potable water, and 3) industrial/commercial (IID 2023, https://www.iid.com/home/showpublisheddocument/20254/638313266942930000)."

DATA REQUESTS

37. Please describe the types of projects in the industrial/commercial water user category.

38. Please clarify how movement of water supply will be conducted through the clearinghouse, and how these measures will address potential delivery shortages over the life of the project.

BACKGROUND: WSA – WATER REDUCTION IMPACT TO PROJECT OPERATIONS

Section 6.1 of the WSA (paragraph 3, Page 6-2) states; Given the prolonged drought conditions and recent communication from the Department of the Interior, reductions to all basin contractors, including IID, are increasingly likely. If such obligatory reductions were to come into effect within the 20-year project life, the applicants are to work with IID to ensure any anticipated reduction can be managed.

DATA REQUESTS

39. While it is reassuring that IID would work with the applicant if drastic water conservation measures were enacted, please explain how such obligatory reductions would impact the operational water supply to the proposed geothermal projects.

40. A planned operational life of a 40-year project is identified in numerous passages in the applications for the three proposed geothermal projects (Jacobs 2023a, Jacobs 2023b & Jacobs 2023c, TN 249724 and TN 249752). Please correct the project life to 40 years throughout the document and ensure that the water availability analysis reflects a 40-year operational period.

BACKGROUND: WSA – IMPACT OF COMBINED WATER DEMAND

Section 7 (Page 7-1) of the WSA lists the construction and operational water demand for MBGP in Table 14 (150 AFY & 5,560 AFY, respectively). However, the water demand

of all three proposed geothermal projects (BRGP, ENGP & MBGP) should be considered together, especially with respect to the limitations of the IWSP set-aside.

DATA REQUEST

41. Please include in the WSA an analysis of how the water demand of all three proposed geothermal projects impacts the regional water supply.

BACKGROUND: WSA – COMPARISON OF PROJECT AND AGRICULTURAL WATER USE

Section 8 of the WSA (Page 8-3) states: "In any case, the proposed project will use less water than the historical agricultural demand of proposed project site, so the proposed project will ease rather than exacerbate overall IID water demands." This statement is erroneous. The rates based on estimated water demand for all three proposed geothermal projects (Black Rock GP: 7.03 AF/acre, Elmore North GP: 40.50 AF/acre and Morton Bay GP: 34.75 AF/acre) are significantly higher than the historic use of 5.1 AF/acre used for comparison.

DATA REQUEST

42. Please correct the statement referenced above.

BACKGROUND: WSA – NON-AGRICULTURAL WATER DELIVERY WITHOUT IWSP

The WSA (Page 8-3) states: "In the event that IID has issued water supply agreements that exhaust the 25 KAFY [thousand acre feet per year] IWSP set aside, and it becomes apparent that IID delivery demands due to non-agriculture use are going to cause the district to exceed its quantified 3.1 MAFY [million acre feet per year] entitlement less QSA/Transfer Agreements obligations, IID has identified options to meet these new non-agricultural demands. These options include (1) tracking water yield from temporary land conversion from agricultural to non-agricultural land uses (renewable solar energy); and (2) only if necessary, developing conservation projects to expand the size of the district's water supply portfolio."

DATA REQUEST

43. Please clarify how tracking yield from land conversion and developing conservation projects in the future will address the likely immediate delivery shortfall. Include actual measures proposed and resulting expansion of the district's water supply portfolio.

REFERENCES

IID 2009 – Imperial Irrigation District (IID). IID Interim Water Supply Policy for Non-Agricultural Projects. Adopted September 9, 2009. Available online at: https://www.iid.com/home/showpublisheddocument/9599/638108689553970000

IID 2023 – Imperial Irrigation District (IID). IID Equitable Distribution Plan. Revised July 26, 2023. Available online at: https://www.iid.com/home/showpublisheddocument/20254/638313266942930000

Jacobs 2023a – Jacobs (TN 249723). Morton Bay Geothermal Project Application for Certification, Volume 1, dated April 18, 2023. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-AFC-01

Jacobs 2023b – Jacobs (TN 249724). Morton Bay Geothermal Project AFC Volume 2, Appendix 5-3 Cultural Resources, dated April 18, 2023. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-AFC-01

Jacobs 2023c – Jacobs (TN 249752). Black Rock Geothermal Project AFC, Volume 1, dated April 18, 2023. Available online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-AFC-03

USBR 2023 – U.S. Bureau of Reclamation (USBR). Near-Term Colorado River Operations, Draft Supplemental Environmental Impact Statement. April 2023. Available online at: https://www.usbr.gov/ColoradoRiverBasin/documents/NearTermColoradoRiverOperations/20230400-Near-termColoradoRiverOperations-DraftEIS-508.pdf