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Document Title:	Willow Rock Energy Storage Center (21-AFC-02) Data Request Response Set 3
Description:	Data Request Response Set 3 for the Willow Rock Energy Storage Center. Biological Resources: DR145, 146, 147, 148 and 149. Project Overview: DR150. Socioeconomics: DR151 and DR152. Water Resources: DR153, 154, 155, and 156.
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REPORT

Willow Rock Energy Storage Center (21-AFC-02)

Data Request Response Set 3

Biological Resources: DR145, DR146, DR147, DR148, DR149
Project Overview: DR150
Socioeconomics: DR151 and DR152
Water Resources: DR153, DR154, DR155 and DR156

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Acronyms and Abbreviations

AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AFC	Application for Certification
BRMIMP	Biological Resources Mitigation Implementation and Monitoring Plan
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
DR	Data Request
mph	miles per hour
WRESC	Willow Rock Energy Storage Center

1.0 INTRODUCTION

GEM A-CAES LLC's (the "Applicant") is responding to the California Energy Commission (CEC) Staff Data Requests Set 3, numbers:

Biological Resources: DR145, DR146, DR147, DR148, DR149

Project Overview: DR150

Socioeconomics: DR151 and DR152

Water Resources: DR153, DR154, DR155 and DR156

This response document addresses CEC Data Request Set 3. The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as presented by CEC Staff and are keyed to the Data Request (DR) numbers (DR#). New or revised graphics, tables, or attachments are provided as attachments and are numbered in reference to the Data Request number. For a hypothetical example, the first attachment used in response to Data Request DR10 would be numbered Attachment DR10-1. Each page in this response document is sequentially page-numbered consistently with the remainder of the document, although some attachments may also have their own internal page numbering system.

2.0 BIOLOGICAL RESOURCES

2.1 Hydrostatic Compensation Surface Reservoir (DR145 and DR146)

2.1.1 Data Request DR145

DR145: *Please provide evidence to support the claim that the floating cover would reduce waterfowl issues.*

Response: The main attractants of large bodies of water to waterfowl are visual cues associated with reflectivity and ripples in moving bodies of water. Based on the company's website, the unique and patented modular floating cover system utilizes hexagon-shaped pieces that provide nearly 100% cover of the water surface. The pieces have a matte-black finish and provide no reflectivity which is the main visual cue for attracting waterfowl. The pieces are made from recycled polypropylene, which will not leach any harmful materials into the water, so even if waterfowl do find the water, the floating disks will not cause the water to be contaminated. The pattern on the back of the disks provides a mosaic covering, which masks any ripple effect that may be associated with a large body of water during windy conditions. Reducing the reflectivity and evidence of ripples will greatly reduce the attractiveness of the area as a waterfowl resource. The Applicant does not anticipate that Project Optimization activities will affect the application of a floating cover. This response will be updated if necessary following Project Optimization activities.

2.1.2 Data Request DR146

DR146: *Please discuss the feasibility of other means of preventing wildlife from accessing the water, including netting or complete enclosure.*

Response: In addition to waterfowl, the hexagon-shaped floating pieces will also deter other wildlife species. These disks will reduce odor, control heat loss, provide UV protection, reduce evaporation and reduce organic growth (such as algae). Reducing algae growth and other water-related odors will reduce the attractiveness of the reservoir to both large and small terrestrial species. In addition to the floating cover, other wildlife prevention measures include the installation of a perimeter fence/walls and rescue ramps. A perimeter fence/wall should be constructed around the entire reservoir. A portion of the project site adjacent to potential residential development will require a perimeter wall. In either case, this fence/wall will prevent wildlife from accessing the reservoir. For those few wildlife species that manage to enter the reservoir, escape ramps will be designed periodically around the outer edge of the reservoir to ensure that wildlife species have a way to escape the reservoir. This can also be completed by having a gentle slope in the upper portion of the reservoir, rather than vertical side walls. Periodic biological monitoring will be completed to document the effectiveness of the avoidance measures. Netting and complete enclosure of the reservoir are not anticipated at this time but could be incorporated into the project design if proposed measures are determined to be ineffective during the monitoring effort. This response will be updated if necessary following Project Optimization activities.

2.2 Desert Kit Fox/American Badger (DR147)

2.2.1 Data Request DR147

DR147: *Please provide a Draft Desert Kit Fox and American Badger Monitoring and Management Plan for CEC staff and CDFW's review. This plan should include at a minimum:*

Background

Protection measures

Pre-construction survey and den/burrow mapping methods

Avoidance measures

Monitoring methods

Den/burrow excavation techniques

Relocation techniques

Artificial burrow/den design

Installation methods and timing

Identification of a wildlife rehabilitation center or veterinary facility capable of and willing to treat injured animals, and report and notifications

Response: The Applicant expects to be required to prepare a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) before the commencement of construction for CEC and CDFW review as a standard Condition of Certification as is typical of other CEC projects. The BRMIMP will address all species of concern including Desert Kit Fox and American Badger. The BRMIMP is expected to include all of the components listed in DR147 as well as a description of the Authority and Lines of Communication, Biological

Resource Environmental Awareness Program, Pre-Construction Surveys, Biological Monitoring, Relocation Plan, Mitigation, and Monitoring Reports.

2.3 Crotch Bumble Bee (DR148 and DR149)

2.3.1 Data Request DR148

DR148: *Please conduct at least 3 days of surveys for Crotch bumble bee. In general, the protocol will require the following criteria for the surveys:*

Survey during peak nectar plant blooming period (~March 1 through June 30)

Survey between 8 am and 4 pm

Survey when temperatures are between 65-90 degrees Fahrenheit

Survey on sunny days with wind less than 8 mph

Minimum 1 person hour of active search time per 3 acres of suitable habitat (this time can be split between multiple surveyors, but the "clock" must be stopped when not actively surveying)

Interval between survey days should be at least 3 weeks

Response: The Applicant has filed a notice of objection to this request on January 12, 2023 (TN 248386).

2.3.2 Data Request DR149

DR148: *Prepare a written report for staff and agency review and comment. At a minimum, please include:*

Surveyor(s) qualifications/resumes

Dates and times of surveys

Weather conditions

Photo log of suitable habitat and nectar plants

Photos of bumble bees for identification

Response: The Applicant has filed a notice of objection to this request on January 12, 2023 (TN 248386).

3.0 PROJECT OVERVIEW

3.1 Construction Laydown and Parking, Reservoir Berms, Seismic Design, and Options for Use of Waste Rock (DR150)

3.1.1 Data Request DR150

DR150: *Please fully explain the meaning(s) of "project optimization," including whether it is a process or a work product or a combination thereof. Also provide a projected schedule for completion of "project optimization."*

Response: The Applicant has requested additional time to prepare this response on January 12, 2023 (TN 248386).

4.0 SOCIOECONOMICS

4.1 Project Construction Workforce (DR151 and DR152)

4.1.1 Data Request DR151

DR151: *Is the non-specialized labor for the project the surface workforce and is it comprised of the "Surface Works" trades presented in Table 5.10-8 and 5.10-9? If not, what trades and workers make up the "non-specialized GESC's construction labor requirements"?*

Response: The Applicant has requested additional time to prepare this response on January 12, 2023 (TN 248386).

4.1.2 Data Request DR152

DR152: *Confirm the percentage of all the surface workers that will be drawn locally from Kern County. Confirm the percentage of all cavern workers that will be drawn local from Kern County.*

Response: The Applicant has requested additional time to prepare this response on January 12, 2023 (TN 248386).

5.0 WATER RESOURCES

5.1 Dam/Reservoir Design/Trace Elements/Groundwater Quality (DR153 through DR154)

5.1.1 Data Request DR153

DR153: *Please confirm if Gannett Fleming, Inc. provided the above-mentioned material to DSOD on Hydrostor's behalf.*

Response: Yes, Gannett Fleming Inc. provided information to DSOD. As noted in DR154, this information was used to support initial consultation with the DSOD and does not reflect the current design.

5.1.2 Data Request DR154

DR154: *If so, please provide the current design of the surface compensation reservoir along with the information Gannett Fleming, Inc. recently submitted to DSOD.*

Response: The goal of the project is to design a reservoir that is non-jurisdictional to DSOD. The optimized design will reduce the berm height so that the reservoir is no longer expected to be a jurisdictional dam with DSOD. Information regarding a potential iteration of the optimized project design was submitted to DSOD. The information provided to DSOD is not relevant to this proceeding as the Applicant is not moving forward with this design.

5.1.3 Data Request DR155

DR155: *Please provide a discussion of the potential for increased concentrations of trace elements as a result of the cycling of the water between the caverns and the compensation reservoir.*

Response: The potential for increased concentrations of trace elements resulting from the batch cycle movement of water between the caverns and the compensation reservoir is expected to be minimal. Evaporative loss from the compensation reservoir will be dramatically reduced with the application of floating covers. The clean

produced water from compression of ambient air and rainwater that will offset evaporative loss is expected to be relatively free of trace elements and will maintain a relatively stable overall working water volume with stable water quality characteristics. The subsurface cavern rock wall/water interface is not expected to be a source of trace metals. Chemical analysis is being performed on rock samples from the horizon where cavern construction is expected. This analysis will include testing for potential leaching of trace elements from the rock such that the requirements (if any) for treatment of the excavated cavern rock and compensation water can be confirmed. Periodic sampling of the reservoir water quality will also be conducted during operation to confirm acceptable water quality characteristics. This response will be updated if necessary following Project Optimization activities.

5.1.4 Data Request DR156

DR156: *Please provide a discussion of the potential interaction of the stored water with groundwater bodies through seepage and the potential impact on the quality of the groundwater.*

Response: The cavern construction for the Willow Rock A-CAES project is targeting the impermeable bedrock that underlies the main water-bearing units in the region. As such, little or no exchange is expected between the A-CAES compensation water and the local aquifers/groundwater bodies. The compensation shaft that carries water through the main water-bearing units is steel lined so that no exchange between the compensation water and aquifer will occur. Negligible groundwater interaction is expected to occur at the cavern depth, since the project by design will be built in an impermeable cavern in rock with extremely low primary and secondary permeability. In addition, hydrostatic pressure monitoring will be conducted to assure system integrity during operation. This response will be updated if necessary following Project Optimization activities.

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