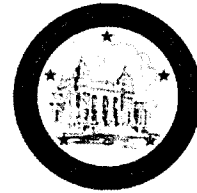


SUBMITTAL TO THE BOARD OF SUPERVISORS  
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA



ITEM: 3.16  
(ID # 11948)

MEETING DATE:

Tuesday, February 25, 2020

FROM: TLMA-PLANNING:

SUBJECT: TRANSPORTATION & LAND MANAGEMENT AGENCY/PLANNING: Desert Harvest Solar Project: BLM Determination of National Environmental Policy Act (NEPA) Adequacy and Revision to CEQA mitigation measures to conform to Bureau of Land Management (BLM) August 21, 2019 Determination of NEPA Adequacy. No Further CEQA Required. Applicant: Desert Harvest, LLC. – Chuckwalla Zoning Area – Desert Center Area Plan - Location: Northerly of Interstate 10, westerly of Desert Center Rice Road (State Highway 177) within portions of Kaiser Road rights-of-way, District 4. [\$0]

RECOMMENDED MOTION: That the Board of Supervisors:

1. **CONSIDER** the BLM Determination of NEPA Adequacy in support of a conclusion that the mitigation measure modifications are consistent with State CEQA Guidelines Sections 15162 and 15164 and will not have a significant effect on the environment and that the updated mitigation measures are not applicable to the portion of the Desert Harvest project within the County of Riverside's jurisdiction; and
2. **RECEIVE AND FILE** BLM Determination of NEPA Adequacy updating and revising mitigation measures WAT-2, WAT-7, and VEG-10 of the Desert Harvest EIS to conform to the County's CEQA review with corresponding updates and revisions to the same measures made by BLM pursuant to NEPA on August 21, 2019.

ACTION:Policy

Charissa Leach, Assistant TLMA Director 2/18/2020

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MINUTES OF THE BOARD OF SUPERVISORS

On motion of Supervisor Jeffries, seconded by Supervisor Perez and duly carried by unanimous vote, IT WAS ORDERED that the above matter is approved as recommended.

Ayes: Jeffries, Spiegel, Washington, Perez and Hewitt  
Nays: None  
Absent: None  
Date: February 25, 2020  
xc: Planning

Kecia R. Harper  
Clerk of the Board  
By:   
Deputy

**SUBMITTAL TO THE BOARD OF SUPERVISORS COUNTY OF RIVERSIDE,  
STATE OF CALIFORNIA**

<b>FINANCIAL DATA</b>	<b>Current Fiscal Year:</b>	<b>Next Fiscal Year:</b>	<b>Total Cost:</b>	<b>Ongoing Cost</b>
<b>COST</b>	N/A	N/A	N/A	N/A
<b>NET COUNTY COST</b>	N/A	N/A	N/A	N/A
<b>SOURCE OF FUNDS: N/A</b>			<b>Budget Adjustment: No</b>	
			<b>For Fiscal Year:</b>	N/A

**C.E.O. RECOMMENDATION:** Approve

**BACKGROUND:**

On August 21, 2019, BLM approved a Determination of NEPA Adequacy authorizing updates and revisions to mitigation measures WAT-2, WAT-7, and VEG-10 as it applies to the Desert Harvest EIS within the BLM's jurisdiction for the following reasons: (1) to reflect revised water estimates due to the reduction of the project footprint, construction duration, and changes in the site preparation and operations and maintenance activities required to construct and operate the project; (2) to incorporate new information as reflected in a revised Water Supply Assessment; and (3) update the mitigation measures to reflect current best practices for solar PV projects analyzed within the Coachella Valley Groundwater Basin on BLM-administered lands. Approval of this action would make corresponding changes to the mitigation measures under CEQA, even though the changes do not alter Public Use Permit No. 914 or Ordinance No. 922, which the Board of Supervisors approved for the Desert Harvest project on June 17, 2014.

Furthermore, the changed measures exclusively apply to the portion of the project under BLM's jurisdiction. The Determination of NEPA Adequacy also approved the addition of battery storage to the project, but the addition applies to BLM-administered lands only, and is outside the land use jurisdiction of the County, and does not alter Public Use Permit No. 914 or Ordinance No. 922. For the same reasons stated in the August 21, 2019 BLM Determination of NEPA Adequacy, no further review under CEQA is necessary to implement the mitigation measure updates and revisions.

**Impact on Citizens and Businesses**

All potential project impacts have been previously evaluated under CEQA and noticed to the public pursuant to the requirements of the County.

**SUPPLEMENTAL:**

**Additional Fiscal Information**

N/A

**Contract History and Price Reasonableness**

N/A

**ATTACHMENTS:**

- A. Summary of proposed modifications

**SUBMITTAL TO THE BOARD OF SUPERVISORS COUNTY OF RIVERSIDE,  
STATE OF CALIFORNIA**

- B. Redline of mitigation measure modifications**
- C. Determination of NEPA Adequacy**

  
\_\_\_\_\_  
Jason Farin, Senior Management Analyst      2/19/2020



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Palm Springs South Coast Field Office

1201 Bird Center Drive

Palm Springs, CA 92262

[www.blm.gov/california](http://www.blm.gov/california)



In Reply Refer To:  
2800 (P) and 8100(P)  
LLCAD060  
CACA-49491  
DOI-BLM-CA-D060-2019-0027-DNA

### MEMORANDUM

**To:** Field Manager, Palm Springs-South Coast Field Office

**From:** Associate State Archaeologist, California State Office

**Subject:** Agency Determinations and Findings under Section 106 of the National Historic Preservation Act (NHPA)

**Project:** Desert Harvest Solar Farm Project, Riverside County, CA

The Bureau of Land Management-Palm Springs South Coast Field Office (BLM) has received a variance request from EDF Renewable Energy (EDF) to amend their Right-of-Way (ROW) grant for the Desert Harvest Solar Project (Project), a solar photovoltaic project approved for construction on BLM-administered land in Riverside County, CA, north of Desert Center. EDF proposes two amendments to their ROW grant, which are described below. The BLM has prepared a Determination of National Environmental Policy Act (NEPA) Adequacy for the proposed variance. (Refer to NEPA document number DOI-BLM-CA-D060-2019-0027-DNA.)

First, EDF proposes to construct, operate, and decommission battery storage units at the Project in the form of containers, located adjacent to inverters, which would be constructed entirely within the BLM-approved ROW boundary for the Project. The battery storage systems would be distributed throughout the Project's solar arrays by co-locating a single Battery Energy Storage System (BESS) container with the Project's block inverters, with the BESS and the inverter housed on the same pad with separate housings. Each BESS container would contain batteries housed on racks, monitoring equipment, fire detection and suppression systems, lighting, and cooling equipment. The Project would utilize up to 40 containers, each approximately 70' long by 12' wide and 13' tall. For detailed photo examples and diagrams, please refer to the Desert Harvest Solar Project Plan of Development (POD) for equipment specifications.

Second, EDF proposes to revise groundwater-related mitigation measures.

This memo addresses the BLM's determinations and findings under Section 106 of the NHPA for the proposed installation of BESS containers. Revision of groundwater-related mitigation measures has no potential to cause effects historic properties.

BLM professional cultural resources staff has reviewed the proposed variance request including the DNA. Additional analysis of effects to historic properties for the request has been provided by PaleoWest (Tennyson 2019, attached). Identification and evaluation efforts for the Project are described in three reports (Akyüz 2012; Smallwood et al. 2012; and Tennyson and Spelts 2019). These efforts included a



BLM Class III intensive survey covering the entire Project's direct Area of Potential Effects (APE) including areas now proposed for the installation of BESS containers, as described in the variance request. All cultural resources within the direct APE were evaluated for inclusion in the National Register of Historic Places (NRHP) and were assessed for direct, indirect, and cumulative effects. Additionally, four historic properties within the indirect APE were identified and assessed for effects. The BLM found that 12 historic properties would be directly adversely affected and four historic properties would be indirectly adversely affected by the Project. Therefore, a Memorandum of Agreement<sup>1</sup> (MOA) was developed to resolve these adverse effects pursuant to the Section 106 regulations at 36 CFR 800.

In accordance with the MOA and the BLM's Record of Decision (ROD) for the Project, the following measures in the Final Environmental Impact Statement for the Project (BLM 2012) are required as part of issuance of the ROW including the approval for the proposed variance:

- AM CULT-1 Monitoring and Mitigation Plan.
- MM CUL-1 Memorandum of Agreement.
- MM CUL-3 Monitoring and Treatment Plan.
- MM CUL-11 Avoid Known Resources.
- MM VR-1 Reduce Construction Related Impacts
- MM VR-2 Revegetation
- MM VR-3 Project Design to Reduce Visual Contrast.
- MM VR-4 Surface Treatment of Project Structures/Buildings.
- MM VR-5 Screening Vegetation Buffer.

Further, the cultural resources mitigation measures have been incorporated into the MOA. MOA Stipulation III (Avoidance, Protection, and Mitigation Measures) outlines protective/avoidance measures and long-term management for historic properties within the direct APE as well as resolutions to visual adverse effects the Project will have on historic properties within the indirect APE.

The installation of BESS containers would have no direct effect on historic properties. All historic properties within the direct APE are located along the gen-tie and are out of the main solar array where the BESS containers would be installed.

The installation of BESS containers, as proposed, would introduce new elements to the landscape. However, the proposed changes represent only a minimal modification to the viewshed and would not cause new or additional indirect adverse effects to historic properties identified within the APE. The mitigation measures addressing visual resource management would reduce visual effects to historic properties.

On this basis, the BLM makes the following findings for this undertaking:

1. The BLM finds that the activities proposed under the variance request would take place within the defined APE for the Project.

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<sup>1</sup> Memorandum of Agreement Between the Bureau of Land Management-Palm Springs South Coast Field Office and the California State Historic Preservation Officer Regarding the Desert Harvest Solar Farm Project, Riverside County, California (fully executed March 29, 2019).

2. The BLM finds that there would be no new or additional adverse effects to historic properties caused by this proposed variance request, provided the above measures are implemented as required by the MOA and the ROD.
3. Accordingly, the BLM finds that the proposed variance is covered by the prior consultations for the Project. No additional consultations are required pursuant to the NHPA.

This memorandum documents the recommendations of the cultural resources staff, the acceptance of these recommendations by the Agency Official as defined in 36 CFR 800.2(a), and constitutes the formal statement of Agency determinations and findings for Section 106 of the NHPA with respect to the proposed variance request.

Recommended by Reviewing Archaeologist:

  
\_\_\_\_\_  
Associate State Archaeologist, California State Office

8/21/19  
\_\_\_\_\_  
Date

Acceptance by Agency Official:

  
\_\_\_\_\_  
Field Manager, Palm Springs-South Coast Field Office

8/21/2019  
\_\_\_\_\_  
Date

*Acting for*

**References Cited:**

**Akyüz, Linda**

- 2012 *A BLM Class III Archaeological Resources Inventory for the Desert Harvest Solar Farm Project and Three Gen-Tie Alternatives Desert Center Vicinity, Riverside County, California.* Prepared for the U.S. Department of Interior, Bureau of Land Management, Palm Springs, California. Prepared by Chambers Group with Contributions by Applied Earthworks.

**Bureau of Land Management (BLM)**

- 2012 *Final Environmental Impact Statement for the Desert Harvest Solar Farm Project.* Bureau of Land Management Palm Springs South Coast Field Office, Palm Springs, California.

- 2019 *Determination of NEPA Adequacy (DNA), Desert Harvest Solar Project – Groundwater Mitigation Measures, Battery Storage, and Access Road Variance.* Bureau of Land Management Palm Springs South Coast Field Office, Palm Springs, California.

**Smallwood, Josh, Susan K. Goldberg, Victoria Smith, and M. Colleen Hamilton.**

- 2012 *Assessment of Indirect and Cumulative Effects to Historic Properties for Desert Harvest Solar Farm Project, Desert Center Vicinity, Riverside County, California.* Prepared for Bureau of Land Management Palm Springs Field Office, Palm Springs, California.

**Tennyson, Matthew and Brian Spelts**

- 2019 *Results of Field Inspections at the Desert Harvest Solar Project.* Letter Report Prepared for Bureau of Land Management Palm Springs Field Office, Palm Springs, California.

**Tennyson, Mathew**

- 2019 *Memorandum titled Cultural Resources Assessment for Proposed Amendments to the Desert Harvest Solar Project.* Prepared for James Barnes, Bureau of Land Management, California State Office, Sacramento, California.

# Documentation of Land Use Plan Conformance and NEPA Adequacy (DNA) for the Desert Harvest Solar Project

U.S. Department of the Interior  
Bureau of Land Management (BLM)

Lease/Serial/Case File No: CACA-49491  
Tracking Number: DOI-BLM-CA-D060-2019-0027-DN  
Tiered To: DOI-BLM-CA-D060-2011-00014-EIS

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**BLM Office:** Palm Springs- South Coast Field Office  
1201 Bird Center Drive  
Palm Springs, California 92262

**Proposed Action Title/Type:** 1) Addition of Battery Storage Systems (BESS) and  
2) Revision to Groundwater Related Mitigation Measures.

**Location of Proposed Action:** The Desert Harvest Solar Project (DHSP) is located near Desert Center, California, in the eastern portion of Riverside County. The nearest communities are Eagle Mountain, Lake Tamarisk, and Desert Center. The solar panels will be constructed and operated on public lands administered by the Bureau of Land Management (BLM) approximately 5 miles north of Interstate 10 (I-10) along Kaiser Road. The State Route 177 / I-10 interchange is the nearest interchange, approximately 50 miles east of Indio, California and 50 miles west of Blythe, California.

**Applicant (if any):** Desert Harvest, LLC

**Attachment A** – Conceptual Drawing

**Attachment B** – Revised Water Supply Assessment for the Desert Harvest Solar Project

**Attachment C** – Proposed Mitigation Measure Language

**Attachment D** – Cultural Resources Assessment for Proposed Amendments to the Desert Harvest Solar Project

**A. Description of the Proposed Action and any applicable mitigation measures:** The DHSP includes a 150-megawatt solar photovoltaic (PV) facility, a 220-kilovolt (kV) generation-intertie transmission line extending from the solar facility to the Southern California Edison (SCE) Red Bluff Substation, and other ancillary facilities located on approximately than 1,412 acres of public land administered by the BLM in Riverside County, California. BLM issued a Record of Decision (ROD) approving the DHSP on March 6, 2013 and issued right-of-way (ROW) grant pursuant to Title V of the Federal Land Policy and Management Act of October 21, 1976 on September 17, 2013.

## **Proposed Action 1: Addition of Battery Energy Storage Systems (BESS)**

Due to contractual obligations and changes to the long-term electrical generation markets, the proposed action is to approve the request from Desert Harvest, LLC to construct, operate, maintain and decommission battery storage units at the DHSP in the form of containers, located adjacent to inverters, which would be constructed wholly within the disturbance area of the already-approved DHSP ROW Grant boundary/perimeter fence. The BESS would be distributed throughout the project's solar arrays by collocating a single BESS container with the project's block inverters, with the BESS and the inverter housed on the same pad with separate housings.

Each BESS container would contain batteries housed on racks, monitoring equipment, fire detection and suppression systems, lighting, and cooling equipment. The regulation and monitoring systems are designed to limit auxiliary power consumption and no separate generator or other power source would be required

## **Documentation of Land Use Plan Conformance and NEPA Adequacy (DNA) for the Desert Harvest Solar Project**

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to run the BESS. DHSP would utilize up to 51 containers. Each container would be approximately 70' long by 12' wide and 13' tall, totaling up to an approximately 1 acre increase in inverter/storage pad size within the existing ROW to accommodate the BESS structures. For detailed photo examples and diagrams, please refer to the 2019 Desert Harvest Solar Project Plan of Development (POD), Figures 1-1 through 1-7 as well as Appendix 2 for equipment specifications (EDF Renewable Energy, 2019). The conceptual drawing included as Attachment A of this document, includes the locations of the block inverters where the BESS would be collocated.

All Applicant Proposed Measures (AM) and Mitigation Measures (MM) listed in the 2013 ROD for the DHSP and plans developed in accordance with those measures would be implemented during construction and operation of the DHSP BESS and would be applicable and implemented as part of the Proposed Action 1, including the preparation and implementation of a Surface Treatment Plan (MM VR-4), Fire Prevention Plan (AM HAZ-8 and MM FIRE-1), Decommissioning Plan (AM HAZ-10), and Waste Management Plan (MM PHS-1).

### **Proposed Action 2: Revision to Groundwater Related Mitigation Measures**

The Proposed Action 2 is to approve the request received from Desert Harvest, LLC to update and revise MM WAT-2, MM WAT-7, and MM VEG-10 based on findings in a revised Water Supply Assessment (WSA) for the Project provided by Desert Harvest, LLC to BLM in August 2019 (WSA; Dudek 2019). This is not a request for additional water use, only a revision to the same previously approved mitigation that would adjust the timing for preparation of plans and implementation of additional mitigation, if necessary.

Desert Harvest, LLC is proposing revisions to MM WAT-2, MM WAT-7, and MM VEG-10 to 1) reflect revised water estimates provided for construction and operations and maintenance (O&M) due to the reduction of the project footprint, construction duration, and changes in the site preparation and O&M activities required to construction and operate the project; 2) incorporate new information provided since the FEIS as reflected in the revised WSA (Dudek 2019); and 3) conform to more recent approved MM language based on recent NEPA analysis for adjacent solar PV projects analyzed within the Coachella Valley Groundwater Basin (CVGB) on BLM-administered lands since the original WSA was prepared for the DHSP in 2012.

### *Background:*

The 2012 FEIS for the DHSP analyzed up to 1,000 acre-feet of water use during a 24-month construction period and up to 39 acre-feet per year for O&M activities for a 1,412-acre project. Additionally the 2012 FEIS analyzed development of up to three new on-site wells to meet the project's water demands. As described in the 2019 POD for the DHSP, the project footprint has been reduced by 14% to 1,208 acres (inclusive of the gen-tie line) and the construction timeframe has been reduced by 46% to 13 months. In addition, construction and operational approaches in the industry for solar PV project development have changed since previous analysis of the DHSP. The project area where grading must occur for site preparation has been reduced substantially and the panel washing cycle required to maintain operation of the project is less frequent than was previously analyzed, each resulting in additional reduction of anticipated water use for both construction and operations of the DHSP.

The current anticipated water usage for construction is 204 acre-feet over a 13-month construction period, and approximately 20 acre-feet per year for O&M activities (aggregating a cumulative 782 acre-feet of water needed to cover the term of the 30-year ROW grant). Additionally, only one on-site well is proposed for development to extract water and meet construction and O&M water demands (EDF Renewable Energy 2019). This decrease in construction and O&M water demands differs from demands analyzed in the 2012 FEIS, as well as the number of on-site wells proposed for development to meet water demands. The revised estimates for water usage at the DHSP as identified above represent an 80% reduction in estimated

**Documentation of Land Use Plan Conformance and NEPA Adequacy  
(DNA) for the Desert Harvest Solar Project**

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construction water usage, a 49% reduction in estimated O&M water usage, and a 63% reduction in total water usage throughout the 30-year lifespan of the Project from the amounts analyzed in the 2012 FEIS.

The revised WSA (Attachment B; Dudek 2019) incorporates the aforementioned project changes (reduced footprint, reduced construction duration, reduced water needs during construction and O&M, and reduced number of wells to be developed). Additionally, Section 3.1.3.1.1 of the revised WSA discusses recent groundwater monitoring data within the CVGB and concludes that groundwater levels appear to be relatively stable across the CVGB and have remained so even during dry periods. At these levels, groundwater remains approximately 200 feet above the Colorado River Accounting Surface as was identified in Sections 3.20 and 4.20.6 of the FEIS. The low estimate for protracted drawdown for DHSP of 0.3 feet, makes it unlikely that the project-related pumping will reach the Colorado River Accounting Surface and trigger the additional mitigation requirements identified in MM WAT-7.

In addition to the revised WSA's conclusions regarding the stability of groundwater levels across the CVGB and the DHSP's protracted drawdown in relation to reaching the Colorado River Accounting Surface, recent NEPA analysis for adjacent solar PV projects within the CVGB, such as the Palen Solar Project (BLM 2018), Desert Sunlight Solar Farm (BLM 2014), and Eagle Crest Gen-Tie and Water Pipeline (BLM 2017), supports an adaptive management approach to groundwater monitoring; where, if groundwater drawdown is determined to be an impact requiring additional mitigation, impacts and mitigation will be evaluated depending on technical solutions available to reduce water consumption, field conditions, and/or additional modeling in the CVGB.

The proposed MM changes would only affect the timing for preparation and implementation of additional mitigation if water is consumed during overdraft conditions in the CVGB (MM WAT-2), the Colorado River Water Supply Plan (MM WAT-7), and the Desert Dry Wash Woodland Monitoring and Reporting Plan (MRP) (MM VEG-10). All AM and MM listed in the 2013 ROD for the DHSP and plans developed in accordance with those measures would be implemented during construction and operation of the DHSP, including the preparation and implementation of a Groundwater Drawdown Monitoring Plan (GWDMRP; prepared in accordance with MM WAT-3), Fugitive Dust Control Plan (AM AQ-1, AM AQ-2, AM AQ-3, MM AIR-1, MM AIR-2, MM AIR-3), and Drought Water Management Plan (MM WAT-6).

*Proposed Text Modifications:*

Proposed modifications to DHSP's MM WAT-2, WAT-7 and VEG-10 would remain similar to their original texts, except that they would be modified from immediate implementation to contingent adaptive implementation as needed to account for changes in circumstances and information that indicate improved local groundwater conditions since the Desert Harvest project FEIS was prepared in 2012.

**MM WAT-2**

As previously approved, MM WAT-2 requires additional mitigation if groundwater from the CVGB is pumped for consumptive use for the project while the basin is projected to be in overdraft conditions. As identified in Section 4 of the revised WSA (Attachment B), according to the definition of overdraft provided in the California Water Code Section 10735(a), the CVGB is not currently in overdraft and, based on the updated water demands for already constructed projects and reasonably foreseeable projects, the CVGB is not forecast to be in overdraft for at least the next 10 years according to the estimated water budget provided in the revised WSA (Dudek 2019).

The requested modification to this measure would require similar additional mitigation to that described in the previously approved MM WAT-2 if future monitoring, analysis, and modeling indicates that the CVGB is or was in overdraft conditions during the construction and operation of the DHSP. The requested modification of MM WAT-2 is based on the revised WSA, which shows – through additional modeling of

**Documentation of Land Use Plan Conformance and NEPA Adequacy  
(DNA) for the Desert Harvest Solar Project**

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the CVGB, changes to project technology, analysis of the results of groundwater monitoring in the basin, and updates to the cumulative impacts of additional projects in the area – that DHSP could extract all its anticipated water demand from CVGB without resulting in overdraft of the groundwater basin. Mitigation will still be required if overdraft conditions are identified during years in which consumptive water is used for DHSP. The proposed MM WAT-2 is included in Attachment C and the previously approved measure can be referenced in the FEIS or ROD.

**MM WAT-7 and MM VEG-10**

Currently, MM WAT-7 requires that a Colorado River Water Supply Plan be prepared prior to issuance of the Notice to Proceed (NTP). The proposed changes to this measure would require the preparation of the Colorado River Water Supply Plan as an adaptive management action if monitoring results from implementation of the GWDMRP show drawdown of 5 feet or more 1 mile from the DHSP site within the monitoring well network established in the GWDMRP. A 5-foot drawdown threshold was identified in the April 2017 Environmental Assessment (EA) prepared for the Eagle Crest Gen-Tie and Water Pipeline as a trigger for additional mitigation regarding impacts to groundwater quantity. The Eagle Crest Gen-Tie and Water Pipeline EA also identifies that even with the expected drawdown associated with the analyzed pumping rate of 2,192 AFY (109620 AF/50 years), the groundwater levels in the area were not expected to reach the Colorado River Accounting Surface. The estimated drawdown resulting from construction activities at DHSP is substantially less than 5 feet.

MM VEG-10 requires the preparation and implementation of a Desert Dry Wash Woodland MRP prior to issuance of NTP. The proposed changes to this measure would require the preparation of the Desert Dry Wash Woodland MRP as an adaptive management action if monitoring results from implementation of the GWDMRP show drawdown of 1 foot or more 1 mile from the DHSP site. Compliance with measures MM WAT-7 and MM VEG-10 prior to NTP issuance, if the proposed changes are approved, would have been met through preparation of the GWDMRP. However, if an applicable threshold of drawdown is met, additional mitigation will be required in accordance with the revised mitigation measures.

The requested modifications to MM WAT-7 and MM VEG-10 are based on the December 2014 Water Variance Environmental Assessment (EA) prepared for the adjacent Desert Sunlight project, which identifies groundwater drawdown modeling results showing that drawdown would be less than 1 foot approximately 1 mile from the modeled pumping location for a pumping rate of 650 acre-feet per year (BLM 2014). As the highest pumping rate anticipated for the 13-month DHSP construction period is less than 200 acre-feet per year, the estimated protracted drawdown is correspondingly 0.3 feet. The estimated drawdown amount for DHSP is less than that recorded during construction groundwater monitoring for the adjacent Desert Sunlight Solar Farm project and significantly less than the 1 foot standard of MM VEG-10.

The proposed MMs WAT-7 and VEG-10 are included in Attachment C and the previously approved measures can be referenced in the FEIS or ROD.

**B. Land Use Plan Conformance:**

*LUP Name:* California Desert Conservation Area

*Dates Approved:* 1980; August 17, 1999

*Other documents<sup>1</sup>:* Northern and Eastern Colorado Desert Coordinated Management Plan

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<sup>1</sup> The DHSP is not subject to the Solar PEIS ROD, or the CDCA Plan Amendments made as a result of that decision and the Project was initiated prior to the Desert Renewable Energy Conservation Plan (DRECP) amendment to the CDCA Plan, and is not subject to DRECP's land use plan decisions.

**Documentation of Land Use Plan Conformance and NEPA Adequacy  
(DNA) for the Desert Harvest Solar Project**

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*Date Approved:* December 19, 2002

*The proposed action is in conformance with the LUP, even though it is not specifically provided for because it is clearly consistent with the following LUP decisions (objectives, terms, and conditions) and, if applicable, implementation plan decisions:*

While renewable energy development is allowed within three of the four multiple-use class designations of the CDCA Plan, the Plan requires an amendment for renewable energy projects not previously identified in the Plan and/or transmission facilities located outside of designated utility corridors.

The Proposed Action is in conformance with the California Desert Conservation Area (CDCA) Plan, 1980, as amended by the DHSP ROD. The project was proposed on undeveloped BLM-administered land, designated Multiple Use Class (MUC) M (Moderate Use) as well as land designated BLM Multiple Use Class L (Limited Use) by the CDCA Plan. Electrical generation, transmission, and distribution facilities may be allowed on both Moderate and Limited Use land within designated utility corridors after NEPA requirements are met and a plan amendment is approved. As discussed in the 2012 FEIS and Proposed CDCA Plan Amendment, Chapter 2, Proposed Land Use Plan Amendment Decisions, Sections 2.2-2.14, the BLM analyzed the impacts of amending the CDCA Plan in order to identify the project development footprint as suitable for energy use. The CDCA Plan Amendment was approved by BLM in the 2013 DHSP ROD (see Section 3.3, Land Use Plan Conformance).

The Proposed Action, which includes co-locating BESS with the inverters and changes to the language in groundwater mitigation measures, remains consistent with BLM's land use designation following approval of the LUP amendment in the ROD.

**C. Identify applicable NEPA document(s) and other related documents that cover the proposed action.**

Argonne (Argonne National Laboratory). 2013. *A Groundwater Model to Assess Water Resource Impacts at the Riverside East Solar Energy Zone*. December 2013.

BLM (Bureau of Land Management). 2013. *Record of Decision for the Desert Harvest Solar Project*. DOI-BLM-CA-D000-2012-0004-EIS, Case File Number: CACA-49491. Palm Springs, California: BLM, Palm Springs-South Coast Field Office. March 6, 2013.

BLM. 2012. *Right-of-Way Grant. Serial No. CACA-49491.* Palm Springs, California: BLM, Palm Springs-South Coast Field Office. Issued September 17, 2013.

BLM. 2014. *Environmental Assessment Desert Sunlight Solar Farm Water Variance Request*. EA No. DOI-BLM-EA-06000-15-08. Case File Number: CACA-48649. Palm Springs, California: BLM, Palm Springs-South Coast Field Office. December 2014. BLM. 2015. *Finding of No Significant Impact – Decision Record. EA No. DOI-BLM-EA-06000-15-08.* Palm Springs, California: BLM, Palm Springs-South Coast Field Office. August 31, 2015.

BLM. 2017. *Eagle Crest Energy Gen-Tie and Water Pipeline Environmental Assessment and Proposed California Desert Conservation Area Plan Amendment*. BLM-DOI-CA-D060-2016-0017-EA. Case File Number: CACA-054096. Moreno Valley, California; BLM, California Desert District. April 2017.

BLM. *Eagle Crest Energy Gen-Tie and Water Pipeline Finding of No Significant Impact.* Palm Springs, California: BLM, Palm Springs-South Coast Field Office. April 2017.



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(DNA) for the Desert Harvest Solar Project**

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BLM. 2018. *Record of Decision for the Palen Solar Project*. DOI-BLM-CA-060-2017-001-EIS, Case File Number: CACA-48810. Palm Springs, California: BLM, Palm Springs-South Coast Field Office. October 2018.

BLM. 2019. *“Right-of-Way Grant. Serial No. CACA-48810.”* Palm Springs, California: BLM, Palm Springs-South Coast Field Office. Issued March 29, 2019.

EDF Renewable Energy. 2019. *Desert Harvest Solar Project CACA-49491 Final Plan of Development. Version 2.* March 25, 2019.

Dudek. 2019. Revised Water Supply Assessment for the Desert Harvest Solar Project. La Quinta, California.

Tennyson, Mathew. 2019. Memorandum titled *Cultural Resources Assessment for Proposed Amendments to the Desert Harvest Solar Project*. Prepared by Paleo West for the Bureau of Land Management, California State Office, Sacramento, California.

**D. NEPA Adequacy Criteria**

**1. Is the new proposed action a feature of, or essentially similar to, an alternative analyzed in the existing NEPA document(s)? Is the project within the same analysis area, or if the project location is different, are the geographic and resource conditions sufficiently similar to those analyzed in the existing NEPA document(s)? If there are differences, can you explain why they are not substantial?**

Yes.

**Proposed Action 1: Addition of Battery Energy Storage Systems (BESS)**

Proposed Action 1 would develop an energy storage system within existing ROW grant boundaries, would serve as a feature of action alternatives that included development of a solar energy project on BLM-administered public lands, and would not result in changes to any of the other proposed and approved Project facilities. Proposed Action 1 would be developed entirely within the previously analyzed and approved disturbance footprint for the DHSP. The BESS would be installed within the existing planned inverter areas and result in a pad-size increase of up to 1 acre total across the entire site. Because Proposed Action 1 would utilize a compatible and commonly deployed energy storage technology (i.e., batteries) and be contained wholly within the already analyzed and approved ROW Grant boundary, Proposed Action 1 would not be a substantial change to the existing geographic and resource conditions analyzed for the DHSP. All activities associated with energy storage system construction and operation would be subject to the existing FEIS mitigation measures and the Memorandum of Agreement (MOA). The existing design standards, including monitoring equipment, fire detection and suppression systems, cooling equipment, and lighting adequately address fire risk associated with the operation of BESS in accordance with AM HAZ-7: Fire Protection and Other Requirements. The implementation of additional approved measures including MM FIRE-1, AM HAZ-7, AM HAZ-8, AM HAZ-10, and MM PHS-7 – which require the preparation and implementation of a Fire Prevention Plan, fire services agreement with Riverside County, and a Decommissioning Plan – further ensure adequate mitigation for any fire risk associated with Proposed Action 1.

**Proposed Action 2: Revision to Groundwater Related Mitigation Measures**

Proposed Action 2 is intended to update MM WAT-2, MM WAT-7, and MM VEG-10 in order to ensure that the current project (reduced footprint, reduced construction duration, reduced water needs during construction and O&M, and reduced number of wells to be developed) and its impacts are mitigated consistent with current conditions and projections for the CVGB (see revised WSA; Attachment B; Dudek

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2019) and consistent with adjacent solar PV projects within the CVGB that implemented an adaptive monitoring program for groundwater per recent NEPA analyses. Proposed Action 2 would not result in a change to the analysis area, project location, or resource conditions previously analyzed.

The revised WSA prepared for the DHSP (Attachment B; Dudek 2019) included current project information and groundwater monitoring data collected within the CVGB since the previous WSA was completed. The WSA reflects the current and projected water use in the CVGB as well as the actual and/or projected water use and status changes of the high-groundwater-demand-projects that were included in the original 2012 WSA for DHSP, including DHSP, Eagle Crest Pumped Storage, Desert Sunlight, Genesis Solar Energy, and Palen Solar Project. The WSA concludes that the water demand for these cumulative projects and DHSP individually are projected to be less than those analyzed and approved in the DHSP FEIS and that there is sufficient on-site groundwater availability to satisfy the DHSP construction and O&M water demand over a 30-year period without overdraft per the CVGB budget and groundwater availability tables (see Section 3.2.3; of the updated WSA included as Attachment B).

MM WAT-2, WAT-7 and VEG-10 would remain essentially similar to their original texts, except that they have been modified from immediate implementation to implementation on an adaptive management basis to account for changes in circumstances and information indicating that local groundwater conditions have improved since the Desert Harvest project FEIS was prepared in 2012.

**2. Is the range of alternatives analyzed in the existing NEPA document(s) appropriate with respect to the new proposed action, given current environmental concerns, interests, resource values and circumstances?**

Yes.

**Proposed Action 1: Addition of Battery Energy Storage Systems (BESS)**

Proposed Action 1 would be developed entirely within the previously analyzed and approved disturbance footprint for DHSP. The proposed configuration for the BESS would be located within areas previously designated for other project facilities, as the BESS would be co-located with proposed inverters on inverter pads. The Proposed Action 1 would be developed within the same geographic area previously surveyed and analyzed and mitigation applied in the FEIS; therefore, the BESS would not result in a new direct, indirect, cumulative, or residual effect to any identified natural resources, historic or cultural resources, or ecologically significant or critical areas. Further, no new environmental concerns, interests, or resource values have been identified since the 2012 FEIS that would warrant development of new alternatives for the Proposed Action.

The Proposed Action 1 involves the deployment of energy storage systems utilizing battery technologies that are in common use and the potential environmental impacts of which are well understood and addressed through design, construction and operational controls. Moreover, the energy storage facilities would be located wholly within the existing approved DHSP ROW Grant footprint, which has been surveyed and analyzed in connection with potential environmental impacts associated with energy use of the site and for which mitigation measures are required to minimize such environmental effects.

**Proposed Action 2: Revision to Groundwater Related Mitigation Measures**

Proposed Action 2 does not affect or indicate a need to modify the range of alternatives analyzed in the FEIS, because proposed revisions to MM WAT-2, MM WAT-7, and MM VEG-10 would not increase impacts outside of developed alternatives, rather, are intended to reflect current environmental conditions and cumulative development scenario within the CVGB (as disclosed in the revised WSA for the DHSP), and establish consistent adaptive groundwater monitoring programs among solar PV projects on BLM-administered land consistent with the findings in the revised WSA for the DHSP.

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**3. Is the existing analysis valid in light of any new information or circumstances (such as, rangeland health standards assessments, recent endangered species listings, and updated lists of BLM-sensitive species)? Can you reasonably conclude that new information and new circumstances would not substantially change the analysis of the proposed action?**

Yes.

**Proposed Action 1: Addition of Battery Energy Storage Systems (BESS)**

The proposed impacts associated with the BESS are within the Project's ROW grant boundary, within previously surveyed areas for biological and archaeological surveys, and within the estimated disturbance impacts analyzed in the FEIS. No impacts associated with the proposed action above what was analyzed in the FEIS would occur. Overall permanent disturbance impacts remain lower than the permanent disturbance impacts in the FEIS. There is no new need for additional analyses beyond the analysis presented in the FEIS. The existing design standards, including monitoring equipment, fire detection and suppression systems, cooling equipment, and lighting adequately address fire risk associated with the operation of BESS, in accordance with AM HAZ-7: Fire Protection and Other Requirements. The implementation of additional approved measures including MM FIRE-1, AM HAZ-7, AM HAZ-8, AM HAZ-10, and MM PHS-7 – which require the preparation and implementation of a Fire Prevention Plan, fire services agreement with Riverside County, and a Decommissioning Plan – further ensure adequate mitigation for any fire risk associated with the Proposed Action 1.

**Proposed Action 2: Revision to Groundwater Related Mitigation Measures**

Section 3.2.3 of the revised WSA finds that 1) sufficient on-site groundwater is available to satisfy the DHSP construction and O&M water demand for a 30-year period and that 2) the CVGB is not currently in overdraft and is not forecast to be in overdraft for at least the next 10 years (Sections 3.2.3 and 3.1.3.1.1; Dudek 2019). The existing NEPA analysis of groundwater extraction and drawdown levels by DHSP in the CVGB is still valid in light of updated modeling in the basin and changes to water demands for current and foreseeable projects as identified in the updated WSA (Attachment B; Dudek 2019). Given the groundwater levels identified in Section 3.1.3.1.1 in the updated WSA and the low estimated protracted drawdown for DHSP, it is not anticipated that project-related pumping would cause significant drawdown as to require additional mitigation according to MM WAT-7 and VEG-10. MM WAT-2, WAT-7 and VEG-10 remain essentially similar to their original texts after the suggested modifications, except that they have been modified from immediate implementation to implementation on an adaptive management basis to account for changes in circumstances and information indicating that local groundwater conditions have improved since the Desert Harvest project FEIS was prepared in 2012.

**4. Are the direct, indirect, and cumulative effects that would result from implementation of the new proposed action similar (both quantitatively and qualitatively) to those analyzed in the existing NEPA document?**

Yes.

**Proposed Action 1: Addition of Battery Energy Storage Systems (BESS)**

The direct, indirect, and cumulative effects associated with the addition of BESS are reasonably within the nature of, and not greater than, those analyzed in the FEIS for the approved project because they fit within the dimensions of the project analyzed in the FEIS and are subject to the same mitigation measures. Consequently, the direct, indirect, and cumulative effects of additional permanent impacts associated with the proposed action are within the scope of those analyzed and mitigated for in the FEIS.

With respect to compliance with Section 106 of the National Historic Preservation Act, the BLM has made the following findings for this undertaking in accordance with the Record of Decision and the MOA (refer to the attached memorandum from Archaeologist, California State Office to Field Manager, Palm Springs

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South Coast Field Office. The findings of this memo are supported by additional analysis conducted by PaleoWest Tennyson 2019):

1. The activities proposed under the variance request would take place within the defined APE for the Project.
2. The BLM finds that there would be no new or additional adverse effects to historic properties caused by this proposed variance request, provided the above measures are implemented as required by the MOA and the ROD.
3. Accordingly, the variance is covered by the prior consultations for the Project. No additional consultations are required pursuant to the NHPA.

**Proposed Action 2: Revision to Groundwater Related Mitigation Measures**

The revised WSA for DHSP (Attachment B; Dudek 2019) found that the groundwater use for the construction and operation of the Project is less than the projected use analyzed in the approved alternative of the FEIS and less than those amounts analyzed during the NEPA analysis associated with the Palen Solar Project and the DHSP in the cumulative impacts analysis of this project. The proposed adaptive management modifications to MM WAT-2, WAT-7 and VEG-10 reflect updated baseline conditions and do not result in new or more intense significant impacts beyond those already disclosed in the FEIS. Consequently, the direct, indirect, and cumulative effects of impacts are similar to those analyzed and mitigated for in the FEIS.

**5. Are the public involvement and interagency review associated with existing NEPA document(s) adequate for the current proposed action?**

Yes.

The BLM published a Notice of Availability (NOA) for public and agency review and comment of the DHSP Draft EIS on April 13, 2012, in the Federal Register. A 90-day comment period was held, for the project and plan amendment, which ended on July 17, 2012. Comments were accepted by the BLM until July 20, 2012. All comments that were received by BLM were accepted.

During the public review period, the BLM hosted public hearings to solicit input from members of the communities and others in the vicinity of the proposed project and alternatives. Information regarding the location and times of the meetings was published on the BLM's website for the project.

Notifications for public scoping meetings regarding the Draft EIS were posted on the BLM's website and sent to, all landowners within 300 feet of the project boundary, and other interested parties. To assist Riverside County in meeting its obligations under the California Environmental Quality Act, notices were also sent to Responsible and Trustee Agencies. Public information meetings were held on May 14, 2012 at the Lake Tamarisk Clubhouse in Desert Center, California, and at the Joshua Tree Community Center in Joshua Tree, California. The BLM representatives made a presentation describing the project. Attendees were documented by signing in on a voluntary sign-in sheet, including 13 attendees at the Lake Tamarisk Clubhouse, and 2 attendees at the Joshua Tree Community Center. A court reporter was present at both meetings to record all oral comments. A total of 37 comment letters and verbal statements containing a total of 552 discrete comments were received during the public comment period that ended on July 17, 2012.

The DHSP FEIS was available for a 30-day public review and protest period. The 30-day public review and protest period closed on December 5, 2012. The protests have been resolved by the Director or have been withdrawn by the protesting party.

Because the proposed BESS are within the impact envelope of the original Proposed Project in the FEIS, the BLM believes the review of the FEIS and affiliated decisions is adequate for the current Proposed Action.

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The BLM has reviewed and determined that the DHSP FEIS and affiliated decisions for both the DHSP, Palen Solar Project, Desert Sunlight Solar Farm, and Eagle Crest Gen-Tie and Water Pipeline in combination with review of the revised WSA for the DHSP (Attachment B; Dudek 2019), are adequate for the current proposed action to revise the mitigation measure language without further review and comment because they do not implicate any new or more intense significant impacts beyond those already assessed in the 2012 FEIS that would require additional public involvement and interagency review.

**E. Persons/Agencies/BLM Staff Consulted**

_____	_____
Jose Najjar Planning & Environmental Specialist, CA Desert District	Date

_____	_____
Janet Cheek Assistant Field Manager, Energy, Lands and Minerals	Date

**Conclusion:**

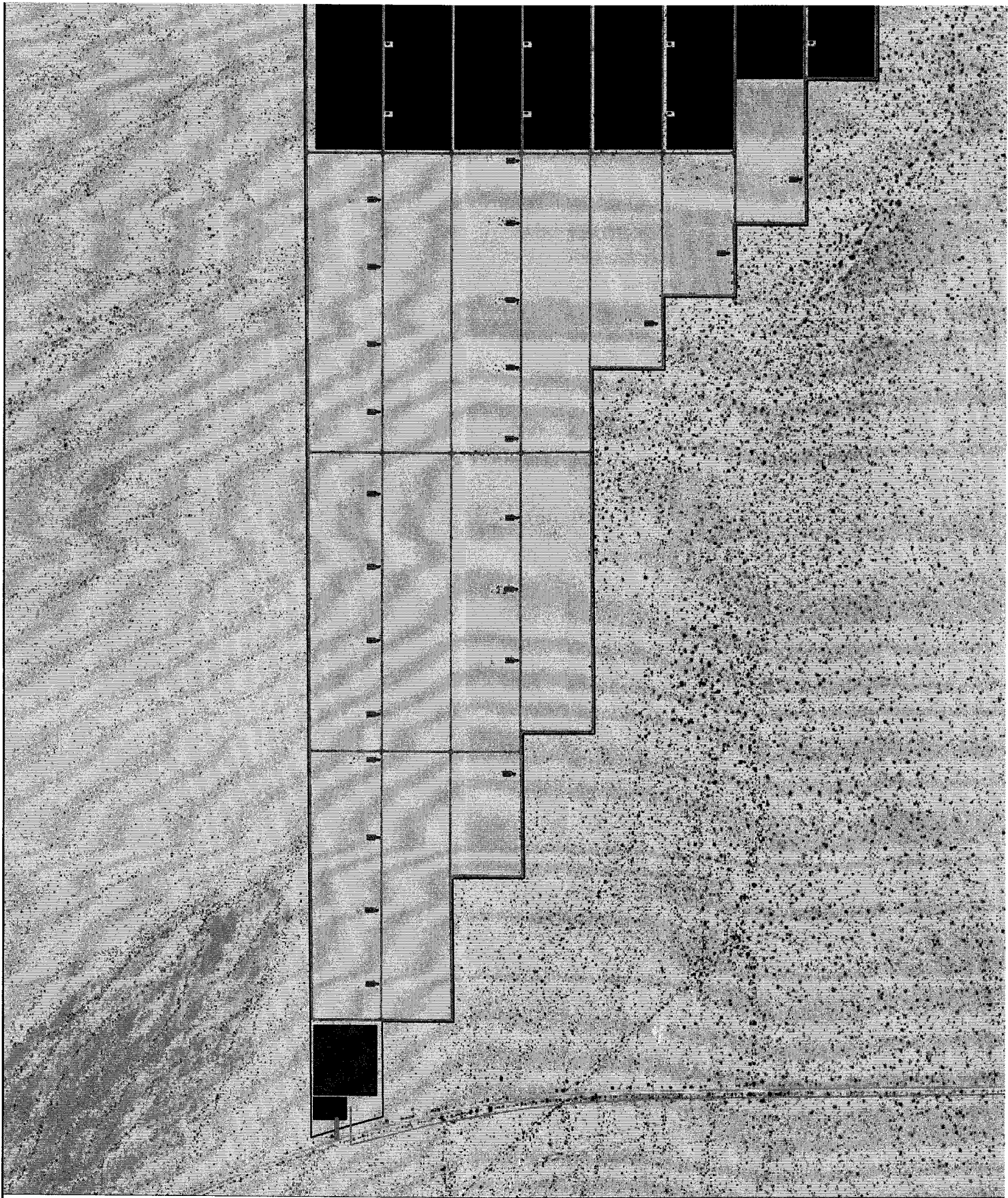
*Based on the review documented above, I conclude that this proposal conforms to the applicable land use plan and that the NEPA documentation fully covers the proposed action and constitute BLM's compliance with the requirements of NEPA.*

\_\_\_\_\_  
Signature of Project Lead  
R. Brian Paul, Project Manager, CA Desert District

\_\_\_\_\_  
Signature of NEPA Coordinator

_____	_____
Signature of Responsible Official: Douglas Herrema, Field Manager, CA Palm Springs FO	Date

**Attachment A**  
Conceptual Drawing



*Conceptual*



**Attachment B**  
Revised Water Supply Assessment for the Desert  
Harvest Solar Project



DRAFT

**Revised Water Supply Assessment for the Desert Harvest  
Solar Project Riverside County, California**

*Lead Agency:*

**Bureau of Land Management  
Palm Springs South Coast Field Office**

1201 Bird Center Drive  
Palm Springs, California 92262

*Prepared for:*

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JULY 2019

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# Acronyms and Abbreviations

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AF	Acre-Feet
AFY	Acre-Feet per Year
CEQA	California Environmental Quality Act
CWC	California Water Code
CVGB	Chuckwalla Valley Groundwater Basin
DHSP	Desert Harvest Solar Project
DWR	California Department of Water Resources
GPM	Gallons per Minute
MM	Mitigation Measure
MCL	Maximum Contaminant Level
mg/L	Milligrams per Liter
MM	Mitigation Measure
MW	Megawatt
O&M	Operations and Maintenance
SB	Senate Bill
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment

# Executive Summary

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This revised Water Supply Assessment (WSA) has been prepared to assist EDF Renewable Energy (EDF) in satisfying the requirements of Senate Bill (SB) 610 for the Desert Harvest Solar Project (DHSP or Project). SB 610 requires the preparation of a WSA for any project that is subject to California Environmental Quality Act (CEQA) and meets certain requirements. A WSA that is associated with a project must include a discussion of the availability of an identified water supply under normal-year, single-dry-year, and multiple-dry-year conditions over a 20-year projection, accounting for the projected water demand of the project in addition to other existing and planned future uses of the identified water supply. An initial WSA was previously prepared for the Project by Aspen Environmental Group in October 2012 and was included in the *Desert Harvest Solar Project Final Environmental Impact Statement and Proposed California Desert Conservation Area Plan Amendment (DHSP EIS)*. Therefore, the purpose of this WSA is to revise the findings of the original WSA, as appropriate, and determine whether the Chuckwalla Valley Groundwater Basin (CVGB) is in an overdraft condition or is forecast to be in overdraft given cumulative groundwater inflows and outflows over a 30-year projection (duration of Project construction and operation).

The DHSP is expected to require an estimated 204 acre-feet (AF) of water to support construction over a 13-month period. Thereafter, the Project will require approximately 20 acre-feet per year (AFY) to support operations and maintenance activities (O&M). Accordingly, over 30 years (duration of Project construction and operation) the project is expected to require 782 AF of water. The primary source of Project water is groundwater from the CVGB. EDF is planning to construct a single on-site groundwater production well to supply Project water.

Mitigation Measure WAT-2 of the DHSP EIS requires the project to offset any water it pumps from the CVGB when it is considered to be in overdraft. The California Water Code defines overdraft as the condition of a groundwater basin where the average annual amount of water extracted over at least a 10-year period exceeds the average annual inflow of water to the basin (California Water Code Section 10735(a)). Based on current cumulative groundwater extraction in the CVGB and recent observed groundwater level trends, the CVGB is not currently in overdraft or forecast to be in overdraft for at least the next 10 years. The CVGB is not likely to be in overdraft for the duration of Project construction and operation unless there is 1) a 10-year drought or 2) groundwater extraction in the CVGB significantly increases. At this time there is sufficient on-site groundwater availability to satisfy the DHSP construction and O&M water demand of 782 AF over a 30-year period.

# 1 Introduction

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## 1.1 Purpose of Document

Senate Bill (SB) 610 was passed on January 1, 2002, amending California Water Code (CWC) to require detailed analysis of water supply availability for certain types of development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and ensuring that land use decisions for certain large development projects are fully informed as to whether sufficient water supplies are available to meet project demands. SB 610 requires the preparation of a Water Supply Assessment (WSA) for a project that is subject to the California Environmental Quality Act (CEQA) and meets certain requirements. When a WSA is required per CWC, it must examine the availability of an identified water supply under normal-year, single-dry-year, and multiple-dry-year conditions over a 20-year projection, accounting for the projected water demand of the project in addition to other existing and planned future uses of the identified water supply.

The Project has been determined to be subject to CEQA by Riverside County, California, acting as lead agency. Following this determination, a public water system is required to prove adequate water supply for the Project, however, the DHSP is not located within the service area of a public water system. Therefore, this WSA provides information on the Project's proposed water supply and provides data to support the sufficiency of supply. The purpose of this WSA is to revise the findings of the original WSA, as appropriate, and determine whether the Chuckwalla Valley Groundwater Basin (CVGB) is in an overdraft condition or is forecast to be in overdraft given cumulative groundwater inflows and outflows over a 30-year projection.

## 1.2 Project Location and Description

EDF, a wholly owned affiliate of EDF Energies Nouvelles, plans to construct and operate a 150-megawatt, nominal capacity, alternating current, solar photovoltaic, energy-generating and storage, project known as the Desert Harvest Solar Project (DHSP or Project) on 1,103 acres in eastern Riverside County (Figure 1). The Project would consist of a main generation area, operations and maintenance (O&M) facility, on-site substation, switchyard, site security, and a 220-kilovolt generation interconnection line. The DHSP would be located approximately 6 miles north of Interstate 10 (I-10) and the rural community of Desert Center, California, on lands administered by the Bureau of Land Management (BLM), Palm Springs–South Coast Field Office, within the Riverside East Solar Energy Zone as identified in the BLM's Programmatic Solar Environmental Impact Statement (EIS) and approved in the Record of Decision (ROD) (Western Solar Plan).

## 1.3 Water Supply Assessment Applicability

State Assembly Bill (AB) 2561 for water supply planning was approved on September 26, 2016. The bill exempted proposed photovoltaic or wind energy generation facilities from the definition of "project" if the facility would demand no more than 75 af of water annually (CWC Section 10912(a)(5)(B)).<sup>1</sup> AB 2561 was effective through

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<sup>1</sup> A proposed photovoltaic or wind energy generation facility approved on or after October 8, 2011, is not a project if the facility would demand no more than 75 af of water annually. CWC Section 10912(a)(5)(B) has been redacted from the CWC.

January 1, 2018; CWC Section 10912(a)(5)(B) has since sunset and is no longer in effect. As of January 1, 2018, photovoltaic or wind energy generation facilities are now considered a “project” if they occupy more than 40 acres of land (CWC Section 10912(a)).<sup>2</sup> The Project area encompasses approximately 1,103 acres. Senate Bill 610 (SB 610) amended Water Code sections 10910 and 10912 to create a direct relationship between water supply and land use. Based on this amendment to the CWC, the Project is subject to SB 610 and therefore requires the preparation of a WSA.

The CWC, as amended by SB 610, requires that a WSA address the following questions:

- Is there a public water system that will service the project?
- Is there a current UWMP (urban water management plan) that accounts for the project demand?
- Is groundwater a component of the supplies for the project?
- Are there sufficient supplies to serve the project over the next 20 years?

### 1.3.1 Identification of a Public Water System

A public water system refers to a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen service connections or regularly serves at least twenty-five individuals (42 U.S.C Sec. 300f(4)). The Project is located in unincorporated Riverside County and would not be connected to a public water system. Water required for construction and operation of the Project would be obtained from an on-site groundwater well.

### 1.3.2 Urban Water Management Plan Coverage

Urban water management plans (UWMPs) are prepared by California's urban water suppliers to support long-term resource planning and ensure adequate water supplies. Every urban water supplier that either delivers more than 3,000 AFY of water annually or serves more than 3,000 connections is required to assess the reliability of its water sources over a 20-year period under normal-year, dry-year, and multiple dry-year scenarios; these are the same requirements of a WSA, as specified by SB 610. UWMPs must be updated and submitted to the California Department of Water Resources (DWR) every 5 years for review and approval.

As the Project is not located within an urban water supplier's service area, there is no UWMP for the area, and there is no Integrated Regional Water Management Plan.

### 1.3.3 Groundwater as a Component of Project Water Supply

Groundwater pumped from the Chuckwalla Valley Groundwater Basin (CVGB) is the proposed source of Project water supply. The CVGB is an unadjudicated basin, meaning owners of property overlying the basin have the right to pump groundwater from the basin for reasonable and beneficial use. Groundwater production in the basin is not managed by an entity and there is no basin groundwater management plan (DWR 2016). Groundwater resources in the CVGB are described in greater detail in Section 3.1.3, Groundwater, and Section 3.3.2, On-Site Groundwater Availability. Water supply availability is discussed in Section 3.2.3, Water Supply and Demand Comparison.

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<sup>2</sup> A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

### 1.3.4 Sufficiency of Supplies over the Next 30 Years

As described in Section 2, Project Water Demand, and Section 3.2, Water Supply Assessment, there is adequate water available at the Project site to meet DHSP construction and O&M demand.<sup>3</sup>

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<sup>3</sup> As specified by SB 610, a project is required to assess the reliability of its water sources over a 20-year period as discussed in Section 1.3.2. This Project is evaluated over a longer 30-year period reflecting the life cycle of the operation of the Project.



## 2 Project Water Demand

### 2.1 Project Construction Water Demand

Water consumption for the DHSP is estimated to be approximately 204 AF during construction for dust suppression and earthwork over an approximately 13-month period. During construction, water would be pumped directly from an on-site groundwater well into 2,000- to 4,000-gallon-tank water trucks, or water may be stored in temporary tanks to help ensure availability of water for trucks and expedient filling thereof. Table 1 presents the water demand for construction of the DHSP. The calculated water demand in gallons per day, per hour, and per minute assumes the proposed on-site groundwater well is pumped continuously 24 hours a day over the 13-month construction period.

**Table 1. Construction Phase Water Demand**

Water Demand (Acre-Feet)	Total Gallons <sup>a</sup>	Gallons per Construction Day <sup>b</sup>	Gallons per Hour	Gallons Per Minute (GPM)
204	66,473,604	164,947	6,872	115

**Notes:**

- <sup>a</sup> One acre-foot is equal to 325,851 gallons.
- <sup>b</sup> Assuming 31 days per month over a 13-month construction period.

### 2.2 Project Operational Water Demand

Following the 13-month construction period, panel rinsing is expected to be conducted up to four times annually as performance testing and weather and site conditions dictate. The annual operational water usage for panel rinsing and use at the O&M facility is expected to be approximately 20 AFY of water.

## 3 Water Supply Assessment

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A WSA is required to identify and describe the water supply source(s) that will serve the Project. CWC Section 10910(d) requires a WSA to include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for a project, and a description of the quantities of water received in prior years if the source is a public water supplier.

### 3.1 Water Resources in Chuckwalla Valley

The DHSP is located within the Chuckwalla Valley Groundwater Basin (Figure 2). This section (Section 3.1) discusses the water resources in the CVGB, including groundwater, surface water, imported water, and recycled water.

#### 3.1.1 Physiographic Setting

The Project site is largely vacant, undeveloped land located in the northwestern portion of the Chuckwalla Valley of the Sonoran Desert about 56 miles west of Blythe, California, and 1.75 miles southwest of Joshua Tree National Park. The elevation of the Project site ranges from about 580 to 660 feet above mean sea level. The climate of the Chuckwalla Valley region is characterized by low precipitation and high aridity with very hot summers and cold winters. The water year mean annual precipitation measured from 1949 to 2018 at the Blythe Airport Station (No. 040927), located approximately 40 miles east of the Project site, is 3.48 inches (Figure 3) (WRCC 2019). Precipitation patterns in the Project area are influenced by two distinct sources. The first source is Pacific frontal systems that bring regional rain bands to Southern California, typically between October and April. The second source is isolated and scattered thunderstorms that occur when moisture from the Gulf of California advects from south to north through the Project site area. This phenomenon, commonly referred to as the “monsoon” season, is strongest in the summer months, but is not a regular or consistent occurrence. As a consequence of these disparate influences, the precipitation record is highly variable both seasonally and annually.

#### 3.1.2 Hydrogeologic Setting

The Chuckwalla Valley Groundwater Basin, DWR 7-5, covers an area of approximately 940 square miles, or 601,573 acres (DWR 1975). The DWR has designated the CVGB as a very low priority basin and therefore development of a Groundwater Sustainability Plan is not currently required.<sup>4</sup> The CVGB is bounded by consolidated rocks of the Mule and McCoy Mountains on the east, the Chuckwalla and Little Chuckwalla Mountains on the south, the Eagle Mountains on the west, and the Coxcomb, Granite, and Little Maria Mountains on the north (Figure 2). A topographic high point between the Chuckwalla Mountains and Palen Mountains creates an east–west surface-drainage divide

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<sup>4</sup> Groundwater basin prioritization was initially conducted by DWR for the California Statewide Groundwater Elevation Monitoring (CASGEM) Program established under the 2009 Groundwater Monitoring legislation (SBx7-6) to provide groundwater elevation information for all of California’s groundwater basins (CWC Section 10933). ). The CASGEM and SGMA requirements apply only to those basins ranked as medium or high priority. All 513 of California’s groundwater basins were assessed based on an algorithm that variously weighted the following components: 1) population; 2) rate of current and projected growth of population; 3) total number of public supply wells; 4) total number of wells that extract from the basin; 5) degree to which basin relies on groundwater; 6) documented impacts on the groundwater within the basin, including overdraft, subsidence, saline intrusion, and other water quality degradation and 7) any other information determined to be relevant by DWR.

(Figure 2). The CVGB is located within the boundary of the Colorado River Basin Regional Water Quality Control Board.

The geology of the Project site and surrounding region is generally comprised of a veneer of Pliocene to Quaternary age sediments, divided into the Pinto Formation, Bouse Formation, and alluvium, overlying bedrock consisting of Mesozoic age granite and metamorphic rocks (Figure 4).<sup>5</sup> The most prolific aquifer material of the CVGB is the Quaternary alluvial sediments, which are upwards of 1,200 feet thick in the central portion of the basin and gradually thin towards the edges and to the western end of the basin. These unconsolidated to semi-consolidated sediment deposits are largely considered unconfined to semi-confined (DWR 1979). The average specific yield of the upper 500 feet of unconsolidated sediments is estimated to be 10 percent (DWR 1979). Specific yield is defined as the ratio of the volume of water drainable by gravity to the total volume of aquifer material.

### 3.1.3 Groundwater

This Section (3.1.3) discusses groundwater conditions in the CVGB including groundwater levels, quality, storage, inflow, and outflow.

#### 3.1.3.1 Groundwater Level and Quality Trends

##### 3.1.3.1.1 Groundwater Levels

Groundwater levels in the CVGB range from ground surface to 400 feet below ground surface. In general, monitoring data indicate groundwater levels are recovering slowly towards pre-intensive agricultural pumping levels in the western portion of the basin, declining slowly in the central portion of the basin, and are mostly stable in the eastern portion of the basin (BLM 2012).

Subsequent groundwater level data collected as part of the Desert Sunlight Solar Farm Project (Desert Sunlight) monitoring program over a 6-year period from March 2012 to March 2017 for Project Well 1 (on-site production well) and Samons Property Well (off-site monitoring well) are presented in Figures 5 and 6, respectively. Project Well 1 is located approximately 0.25 miles north and up-gradient of the DHSP boundary, while Samons Property Well is located approximately 675 feet south and down-gradient (Figure 7). Project Well 1 and Samons Property Well both exhibit stable groundwater conditions (no significant trend) over the 6-year monitoring period with maximum groundwater level fluctuations of approximately 1-foot and 0.5-foot, respectively.<sup>6</sup> In March 2017, the depth to water below top of well casing in Desert Sunlight Project Well 1 was 204.89 feet, and in Samons Property Well was 112.20 feet (Northstar 2017).

Groundwater level data for U.S. Geological Survey well 007S020E28C001S recorded over the time period from August 2004 to March 2019 are presented in Figure 8. The well is located in the eastern portion of the CVGB approximately 31 miles southeast of the DHSP (continuous long-term groundwater level data is not available for wells nearby the Project site). The data indicate groundwater levels steadily increased by about 2 feet in the eastern portion of the basin between 2006 and 2016, then slightly decreased by approximately 0.75 feet from 2016 to

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<sup>5</sup> The Mesozoic Era in the geological timescale spans from about 252 to 66 million years ago, the Pliocene Epoch from 5.33 million to 2.58 million years ago, and the Quaternary Period from approximately 2.58 million years ago to the present.

<sup>6</sup> Northstar Environmental Remediation performed the Mann-Kendall test on groundwater level data included in the *Desert Sunlight Solar Farm Project 2017 First Quarter Groundwater Level Monitoring Report*. The Mann-Kendall test indicated that there was no significant trend for Project Well 1 and Samons Property Well at a 95% confidence interval (Northstar 2017).

2019. The data also show the seasonal fluctuation in basin groundwater levels with the highest groundwater levels observed in the winter and spring and lowest in the summer and fall.

Recent manual groundwater level measurement data collected by Dudek in May 2019 for the *Desert Harvest Solar Project Groundwater Monitoring Groundwater Monitoring and Reporting Plan—Limited Notice to Proceed* indicate that groundwater levels range from 69.15 feet (Chuckwalla Valley Raceway production well) to 188.30 feet (Palen Solar Project well OW-1) below top of casing in the western portion of the CVGB (unpublished fieldwork completed by Dudek May 2019). For reference, the static water level in well OW-1 in September 2009 was 182.88 feet below top of casing (AECOM 2010).

Overall, groundwater levels appear to be relatively stable across the CVGB and have remained so even during periods of below average precipitation such as the 2014 to 2016 water years (Figure 3).

### 3.1.3.1.2 Groundwater Quality

Groundwater quality in the CVGB is characterized by elevated concentrations of total dissolved solids (TDS), chloride, fluoride, sulfate, sodium, and boron (Everett et al. 2013). These constituents can impair groundwater for domestic and/or irrigation use. TDS concentrations in the basin range from 274 to 12,300 milligrams per liter (mg/L), with the lowest concentrations observed in the western portion of the basin (BLM 2012).

Groundwater quality data collected October 19, 2011 for Desert Sunlight Project Well 1 (see Figure 7), are presented in Table 2. Water quality analyses for Project Well 1 indicated that several metals and inorganic constituents exceeded State of California primary or secondary maximum contaminant limits (MCL). These constituents included arsenic (0.026 milligrams per liter [mg/L]), chromium (0.061 mg/L), lead (0.028 mg/L), fluoride (7.5 mg/L), TDS (1,200 mg/L), and pH (8.6).

**Table 2. Desert Sunlight Production Well Groundwater Quality Results**

Parameter	MCL	Source	Units	Sample Collected October 19, 2011
<b>Metals</b>				
Antimony	0.006	CA Primary	mg/L	ND (<0.004)
Arsenic	0.01	CA Primary	mg/L	<b>0.026</b>
Barium	1	CA Primary	mg/L	0.63
Beryllium	0.004	CA Primary	mg/L	0.0032
Cadmium	0.005	CA Primary	mg/L	ND (<0.002)
Chromium	0.05	CA Primary	mg/L	<b>0.061</b>
Cobalt	-	-	mg/L	0.025
Copper	1.0	CA Secondary	mg/L	0.063
Lead	0.015	CA Primary	mg/L	<b>0.028</b>
Mercury	0.002	CA Primary	mg/L	ND (<0.0002)
Molybdenum	-	-	mg/L	0.017
Nickel	0.1	CA Primary	mg/L	0.044
Perchlorate	0.006	CA Primary	mg/L	NS
Selenium	0.05	CA Primary	mg/L	ND (<0.004)
Silver	0.1	CA Secondary	mg/L	ND (<0.002)
Thallium	0.002	CA Primary	mg/L	ND (<0.002)

**Table 2. Desert Sunlight Production Well Groundwater Quality Results**

Parameter	MCL	Source	Units	Sample Collected October 19, 2011
Vanadium	-	-	mg/L	0.11
Zinc	5	CA Secondary	mg/L	0.13
<i>Inorganics</i>				
Total Kjeldahl Nitrogen	-	-	mg/L	0.72
Alkalinity as CaCO <sub>3</sub>	-	-	mg/L	180
Bicarbonate as CaCO <sub>3</sub>	-	-	mg/L	160
Carbonate as CaCO <sub>3</sub>	-	-	mg/L	16
Hydroxide as CaCO <sub>3</sub>	-	-	mg/L	ND (<2.0)
Chloride	250	CA Secondary	mg/L	89
Fluoride	2	CA Primary	mg/L	<b>7.5</b>
Nitrate as NO <sub>3</sub>	45	CA Primary	mg/L	3.6
Nitrite as N	1	CA Primary	mg/L	ND (<0.15)
Phosphorus	-	-	mg/L	1.0
Sulfate	250	CA Secondary	mg/L	130
Total Dissolved Solids (TDS)	500	CA Secondary	mg/L	<b>1,200</b>
Total Suspended Solids (TSS)	-	-	mg/L	650
pH	6.5 - 8.5	CA Secondary	pH units	<b>8.6</b>
Specific Conductance	900	CA Secondary	µmhos/cm	790

**Source:** West Yost 2012.

**Notes:** MCL=maximum contaminant limits; mg/L=milligrams per liter; ND=Not detected to the limit shown in parentheses; bolded values are those that exceed the maximum contaminant limit; µg/L=micrograms per liter; µmhos/cm=micromhos per centimeter; NS=not sampled

More recent groundwater quality data collected by Dudek April 1, 2019 for the Chuckwalla Valley Raceway production well, located approximately 2.8 miles southeast of the DHSP, indicated that groundwater exceeds State of California primary or secondary MCLs for several metals and inorganic constituents. Similar to the Desert Sunlight production well water quality results, groundwater from the Chuckwalla Valley Raceway production well exceeded MCLs for arsenic (0.017 mg/L), iron (0.37 mg/L), fluoride (7.3 mg/L), and TDS (550 mg/L) (Dudek 2019).

### 3.1.3.2 Groundwater Storage, Inflow, and Outflow

#### 3.1.3.2.1 Groundwater Storage

The DWR reports that the total storage capacity of the CVGB is estimated to be 9,100,000 AF (DWR 1975). The upper 100 feet of saturated sediments in the basin are estimated to have 900,000 AF of groundwater in storage (DWR 1975).

#### 3.1.3.2.2 Groundwater Inflow

Recharge to the CVGB occurs through percolation of runoff from the surrounding mountains, infiltration of precipitation, irrigation and wastewater return flow, and groundwater inflow from the Orocopia Valley (DWR 7-31), Pinto Valley (DWR 7-6), and debatably the Cadiz Valley (DWR 7-7) groundwater basins (BLM 2012; DWR 1979). Groundwater in the CVGB generally follows the land surface topography and flows west to east towards the Lower Colorado River Valley.

The Chuckwalla Valley watershed receives between 258,000 AFY to 315,000 AFY total precipitation (Aspen 2018; BLM 2012). Groundwater recharge from precipitation is estimated as a percentage of total precipitation in the Chuckwalla Valley and in previous studies has ranged from 2 percent to 10 percent, with 3 percent of the total average precipitation being the most commonly used conservative estimate of recharge for a normal (average) water year (Aspen 2018; BLM 2012). There have been substantial differences in reported estimates of the amount of infiltration recharge to the CVGB by precipitation, in part due to a lack of reliable data (Shen et al. 2017; Fang et al. 2017 and 2019). Precipitation-related recharge estimates have ranged from 2,060 AFY to 9,448 AFY (Aspen 2018; BLM 2012). For the purpose of this WSA, natural recharge from precipitation is assumed to be 8,588 AFY for a normal water year (about 3 percent of average total precipitation), 6,441 AFY for a single-dry water year (75 percent of normal water year), 7,300 AFY for the first year of a multiple-dry water year (85 percent of normal water year), 6,012 AFY for the second year of a multiple-dry water year (70 percent of normal water year), and 4,723 AFY for the third year of a multiple-dry water year (55 percent of normal water year) (BLM 2012). However, the actual amount of groundwater recharge from precipitation for normal, single-dry, and multiple-dry water years is uncertain as precipitation-related recharge depends on local geology and the volume of mountain front runoff (Aspen 2018).

Infiltration of irrigation water applied to crops within the CVGB is estimated to contribute approximately 800 AFY of recharge to the basin, while wastewater return flow that originates from the Chuckwalla and Ironwood state prisons, and the Lake Tamarisk development, is estimated to contribute about 831 AFY to the regional aquifer (Worley Parsons 2009). Combined, infiltration of irrigation water and wastewater account for 1,631 AFY of aquifer recharge.

Multiple studies have estimated and summarized the total subsurface inflow to the CVGB (i.e., Argonne 2013; Shen et al. 2017; BLM 2012; Fang et al. 2017 and 2019). However, there has been significant variation in expert opinion, and thus high uncertainty, regarding the amount of recharge the CVGB receives from adjacent groundwater basins with estimates ranging from 953 AFY to 6,700 AFY (BLM 2012). This uncertainty is in part due to a lack of long-term consistent groundwater level monitoring data and the simplifying assumptions inherent to the groundwater models used. For the purpose of this WSA, subsurface inflow to the CVGB is assumed to be 3,500 AFY, which is approximately in the middle of the range of estimates reported in previous studies and is the value most commonly used in CVGB water budget analyses.

#### 3.1.3.2.3 Groundwater Outflow

Groundwater outflow from the CVGB occurs through subsurface flow to the Palo Verde Mesa Groundwater Basin (DWR 7-39), evapotranspiration from Palen Dry Lake, and groundwater extraction.

Estimates of subsurface outflow from the CVGB to the Palo Verde Mesa Groundwater Basin have ranged from zero outflow (Argonne 2013) to 1,162 AFY (Aspen 2018), with 400 AFY being the estimate most often used in CVGB water budget analyses and the value used for the purpose of this WSA.

Historical groundwater extraction in the CVGB was estimated to be a nominal 11 AF in 1952. By 1966, pumping rates dramatically increased to 9,100 AF (DWR 1975). Current groundwater extraction in the CVGB is estimated to be approximately 2,605 AFY in the eastern portion of the basin and 7,900 AFY in the western portion of the basin where the vast majority of groundwater wells are located, for a total of 10,505 AFY of groundwater extracted (BLM 2012). However, total pumpage estimates have ranged from 4,700 AFY to 10,579 AFY, with limited information on groundwater usage by entity to support the estimates (Aspen 2018). Groundwater demands in the basin include

water for several solar farms, the Lake Tamarisk development and golf course, agricultural irrigation, domestic use, and the Ironwood and Chuckwalla State Prisons. For the purpose of this WSA, total groundwater extraction is estimated to be 10,968 AFY as discussed below in Section 3.2.3. This conservative estimate (higher range of estimated pumping), considers that the groundwater demand of solar photovoltaic projects is often a one-time construction use with significantly less water required thereafter for operations and maintenance.

Evapotranspiration at Palen Dry Lake is believed to occur through capillary action and transpiration by phreatophytic vegetation along the margins and at the northwestern corner of the dry lake where depth to groundwater has been reported to be approximately 8 to 25 feet below ground surface based on nearby well groundwater levels and soil borings (BLM 2012). The rate of groundwater evaporation has been estimated to be 0.0583 feet of water per acre for three months of the year across an area of 2,000 acres, which equates to approximately 350 AFY of evapotranspiration (BLM 2012).

### 3.1.4 Surface Water

The DHSP is located in the Palen Hydrologic Area (717.2), which encompasses an area of approximately 656 square miles (419,661 acres) draining the Eagle, Coxcomb, Granite, Palen, and Chuckwalla mountains (Figure 2). Most of the precipitation that falls in the Palen Hydrologic Area either evaporates, is transpired by plants, or infiltrates into the underlying groundwater basins, primarily the CVGB. Natural surface water features in the Project area are ephemeral, meaning that they only convey flows in direct response to precipitation events. Man-made surface water features in the area are limited to water storage ponds for agriculture and the Lake Tamarisk development. No surface water features that could be a source of Project water exist near the DHSP.

### 3.1.5 Imported Water

Imported water is currently not available in the vicinity of the DHSP, and, as stated in Mitigation Measure (MM) WAT-2—Alternative Water Source and Groundwater Offsets in the Final Environmental Impact Statement for the Project approved by BLM in November 2012, “Out-of-basin water may not be trucked to the project site from outside of the basin.” (BLM 2012) However, MM WAT-2 states that “For any year during which it is projected that the Chuckwalla Valley Groundwater Basin (CVGB) would be affected by overdraft conditions, the project owner shall either offset or avoid using CVGB water to meet water supply requirements associated with construction, operation and maintenance, or decommissioning of the Desert Harvest Solar Project (DHSP).” (BLM 2012) MM WAT-2 goes on to state that “the project owner may purchase water from a source outside of the CVGB and use this water to recharge the CVGB via recharge ponds within the CVGB, such as the planned Upper Chuckwalla Groundwater Basin recharge pond under the management of the Metropolitan Water District” (BLM 2012).

### 3.1.6 Recycled Water

Recycled water infrastructure does not exist in the vicinity of the DHSP and is not considered a potential source of Project water supply. The Project will not use recycled water during project construction or O&M.

## 3.2 Water Supply Assessment

### 3.2.1 Water Demand Projections

It is estimated that approximately 204 AF of water will be used during the 13-month construction period for the DHSP. Subsequently, up to 20 AF of water will be required annually for panel washing and dust mitigation as part of Project O&M. Accordingly, over 30 years the project is expected to require 782 AF of water. Water will be sourced from a new on-site groundwater well that will be installed in the northwestern corner of the Project site (Figure 7).

### 3.2.2 On-Site Groundwater Availability

As stated above, the Project owner has proposed to install a new on-site groundwater production well to satisfy all Project water demand. Based on a review of DWR well completion reports for groundwater production wells within a 2-mile radius of the DHSP, the average well yield is approximately 1,142 gallons per minute (GPM) with a maximum yield of 1,500 GPM (Table 3) (SWRCB 2019).

**Table 3. Well Completion Report Database Statistics for Production Wells Nearest the Project Site**

Well Type	Well Log Number	Completion Depth (Feet)	Well Yield (GPM)
Irrigation	455508	800	1,200 <sup>a</sup>
Irrigation	1082702	1,005	1,500 <sup>b</sup>
Domestic	E0149728	520	727 <sup>a</sup>
<b>Average</b>	<b>NA</b>	<b>828</b>	<b>1,142</b>

Source: SWRCB 2019.

Notes: NA=not applicable.

<sup>a</sup> Well yield estimated via dedicated pump and motor.

<sup>b</sup> Well yield estimated via airlifting.

The closest groundwater supply well to the Project site is the Desert Sunlight production well, Project Well 1, located approximately 0.25 miles north of the DHSP. The verified production capacity of Project Well 1 is up to 600 GPM (West Yost 2012). For the purpose of this WSA, it is conservatively assumed that the DHSP proposed on-site production well could produce 300 GPM, which is half the reported yield for the Desert Sunlight production well. If pumped continuously at a rate of 300 GPM, the DHSP proposed on-site production well could produce 484 AFY of groundwater, which is 280 AFY more water than is required for project construction. Based on this analysis, a single on-site groundwater production well would be able to satisfy the DHSP water demand.

### 3.2.3 Water Supply and Demand Comparison

Groundwater extracted from the CVGB has been identified as the only source of water to satisfy the Project construction and O&M demand of 782 AF. Therefore, an analysis of the impact of the Project on CVGB groundwater resources for normal, single-dry, and multiple-dry water years is warranted.

The CVGB groundwater inflow and outflow estimates used in this WSA to determine the availability of groundwater resources for DHSP construction and O&M were adopted from the *Water Supply Assessment for Desert Harvest Solar Project* (BLM 2012) and updated using information provided in the *Palen Solar Project Water Supply Assessment* (Aspen 2018) to reflect current and projected water use in the CVGB. The actual and/or projected



water use as well as the status of many of the high groundwater demand projects included in the original WSA for the DHSP have changed, most notably the Eagle Crest Pumped Storage, Desert Sunlight, Genesis Solar Energy, and Palen Solar Power projects. Table 4 provides a comparison of the estimated cumulative projects water use projections contained in the original WSA for the DHSP to current water use projections based on available up-to-date information.

**Table 4. Comparison of Previous and Current Cumulative Projects Water Use Projections**

Project	Status	Original Const.	Updated Const.	Difference	Original O&M	Updated O&M	Difference
Eagle Crest Pumped Storage	Proposed	8,066	0	-8,066	2,380	0	-2,380
Desert Sunlight Solar Farm	Completed	650	715 <sup>a</sup>	+65	0.2	0.2	0
Genesis Solar Energy	Completed	1,368	1,368	0	1,644	218	-1,426
Palen Solar Power	Proposed	700	255 <sup>b</sup>	-445	300	41	-259
<b>Totals</b>		<b>10,784</b>	<b>2,338</b>	<b>-8,446</b>	<b>4,324</b>	<b>259</b>	<b>-4,065</b>

Source: BLM 2012; Aspen 2018.

Notes: All values are in acre-feet per year (AFY); "Const."=construction; negative sign (-) indicates a decrease in demand; positive sign (+) indicates an increase in demand; values are based on published estimates unless otherwise noted and do not rely upon actual groundwater pumping data which may be different.

<sup>a</sup> The BLM authorized use of up to 1,550 AF of groundwater August 2015 for construction of the Desert Sunlight Solar Farm Project, as detailed in the Desert Sunlight Solar Farm Water Variance Request (Environmental Assessment Number: DOI-BLM-EA-06000-15-08).

<sup>b</sup> Value based on the Palen Solar Project Supplemental EIS/EIR (May 2018). Construction of the project is anticipated to start in 2019.

As shown in Table 4, the updated cumulative projects water use projections are much lower (approximately 12,511 AF less) than those contained in the original WSA for the DHSP, especially if the Eagle Crest Pumped Storage Project is excluded from the water use projections. The Eagle Crest Pumped Storage Project has by far the single highest groundwater demand, requiring almost as much water as the total existing estimated groundwater extraction in the CVGB of 10,505 AFY, and about 10 times more O&M water than all other projects combined. In the original WSA for the DHSP, the 20-year water availability projections showed a negative balance or reduction of groundwater in storage under every climatic scenario (BLM 2012). Upon closer examination it is apparent that the Eagle Crest Pumped Storage Project and the Genesis Solar Energy Project were the two projects that drove the water balance presented in the original WSA. However, as shown in Table 4 above, the Genesis Solar Energy Project has been completed and the updated O&M demand of the project is 1,426 AF less water than the original estimate. Additionally, although the Eagle Crest Pumped Storage Project is still under consideration, the likelihood of it commencing construction in the foreseeable future is very low due to the project's failure to meet construction deadlines, the project's failed attempts to obtain an off-taker, and pending legal challenges before the Interior Board of Land Appeals and the Federal Energy Regulatory Commission. Therefore, for the purpose of this WSA, the water demand of the Eagle Crest Pumped Storage Project is not included in the analysis. However, if the Eagle Crest Pumped Storage Project commences construction, the results of this analysis will have to be revised accordingly.

As discussed in Section 3.1.3.2, a wide range in estimates of current groundwater extraction in the CVGB have been reported. For the purpose of estimating the water budget for the CVGB under various climatic scenarios, existing groundwater extraction in the CVGB is assumed to be 10,505 AFY (domestic and agricultural pumping) plus the water demand of the Desert Sunlight Solar Farm (0.2 AFY) and Genesis Solar Energy (218 AFY) projects for a

total baseline groundwater extraction of 10,723 AFY. The Eagle Crest Pumped Storage Project water demand is not included in the following analyses. Table 5 provides a summary of the estimated baseline water budget for the CVGB for normal, single-dry, and multiple-dry water years.

**Table 5. Estimated Baseline Water Budget for the CVGB**

Budget Component	Normal (Average) Year	Single-Dry Year	Multiple-Dry (Year 1)	Multiple-Dry (Year 2)	Multiple-Dry (Year 3)
<b>Inflow</b>					
Recharge from Precipitation <sup>a</sup>	+8,588	+6,441	+7,300	+6,012	+4,723
Irrigation/Wastewater Return Flow	+1,631	+1,631	+1,631	+1,631	+1,631
Underflow from Pinto and Orocopia Valley Groundwater Basins	+3,500	+3,500	+3,500	+3,500	+3,500
<b>Total Inflow</b>	<b>+13,719</b>	<b>+11,572</b>	<b>+12,431</b>	<b>+11,143</b>	<b>+9,854</b>
<b>Outflow</b>					
Underflow to Palo Verde Mesa Groundwater Basin	-400	-400	-400	-400	-400
Groundwater Extraction	-10,723	-10,723	-10,723	-10,723	-10,723
Evapotranspiration at Palen Dry Lake	-350	-350	-350	-350	-350
<b>Total Outflow</b>	<b>-11,473</b>	<b>-11,473</b>	<b>-11,473</b>	<b>-11,473</b>	<b>-11,473</b>
<b>Inflow - Outflow</b>					
<b>Budget Balance</b>	<b>+2,246</b>	<b>+99</b>	<b>+958</b>	<b>-330</b>	<b>-1,619</b>
<b>Percentage of Total Groundwater in Storage</b>	<b>+0.02%</b>	<b>+0.001%</b>	<b>+0.01%</b>	<b>-0.004%</b>	<b>-0.02%</b>

Source: Aspen 2018; BLM 2012.

Notes: All values are in acre-feet per year (AFY) unless otherwise noted; plus sign (+) indicates inflow or surplus; negative sign (-) indicates outflow or deficit; total CVGB groundwater in storage is estimated to be 9,100,000 acre-feet (AF).

<sup>a</sup> Natural recharge from precipitation is assumed to be 8,588 AFY for a normal water year (3 percent of average total precipitation), 6,441 AFY for a single-dry water year (75 percent of normal water year), 7,300 AFY for the first year of a multiple-dry water year (85 percent of normal water year), 6,012 AFY for the second year of a multiple-dry water year (70 percent of normal water year), and 4,723 AFY for the third year of a multiple-dry water year (55 percent of normal water year).

As shown in the baseline water budget for the CVGB (Table 5), for normal and single-dry water year conditions there is an estimated 2,246 AFY and 99 AFY surplus groundwater, respectively. Similarly, for the first year of multiple-dry water year conditions, there is an estimated 958 AFY surplus groundwater. However, for the second and third years of multiple-dry water year conditions, there is an estimated groundwater deficit of 330 AFY and 1,619 AFY, respectively.

Table 6 below shows CVGB water availability projections under normal-year, single-dry-year, and multiple-dry-year conditions for the years 2019 through 2049 (30-year projection) using the estimated values presented in Table 5 above in addition to the construction (years 2019 through 2020) and O&M (years 2021 through 2049) water demand of the Palen Solar Power and Desert Harvest Solar projects. The estimated construction water demand of the Palen Solar Power Project is 255 AFY and the O&M demand is 41 AFY. The estimated construction water demand of the Desert Harvest Solar Project is 204 AFY and the O&M demand is 20 AFY. Therefore, for the years 2019 through 2020 the total estimated groundwater extraction in the CVGB is 11,182 AFY (during construction of both the projects), and for the years 2021 through 2049 total extraction remains constant at 10,784 AFY (during O&M phase of all projects). It is important to note that these groundwater availability projections do not consider additional water demand of future projects constructed in the Chuckwalla Valley outside of those discussed in this WSA.

**Table 6. CVGB Groundwater Availability Projections for a 30-Year Period (2019–2049)**

Year	Project Year	Normal (Average) Year	Single-Dry Year	Multiple-Dry (Year 1)	Multiple-Dry (Year 2)	Multiple-Dry (Year 3)
2019	1	1,787	-360	499	-789	-2,078
2020	2	1,787	-360	499	-789	-2,078
2021	5	2,185	38	897	-391	-1,680
2049	10	2,185	38	897	-391	-1,680
2034	15	2,185	38	897	-391	-1,680
2039	20	2,185	38	897	-391	-1,680
2044	25	2,185	38	897	-391	-1,680
2049	30	2,185	38	897	-391	-1,680

**Source:** Aspen 2018; BLM 2012.

**Notes:** All values are in acre-feet per year (AFY) unless otherwise noted; negative sign (-) indicates outflow or deficit; water supply availability projections are presented in five-year increments after the year 2020 to simplify the table for presentation purposes.

Based on the 30-year CVGB groundwater availability projections, the DHSP can extract all of its anticipated 204 AFY of construction water and 20 AFY of O&M water from the CVGB without resulting in a reduction of groundwater in storage during normal-water-year and the first year of multiple-dry-year conditions. For single-dry-year and multiple-dry-year conditions when there is already a groundwater deficit, construction of the Project would increase the overall deficit by 0.002% and operation of the Project would increase the deficit by 0.0002%. However, as shown in Table 5, a reduction of groundwater in storage would occur regardless of the Project during the second and third years of multiple-dry-year conditions and, as discussed in previous studies, these conditions would be temporary, as the CVGB would recover from projected groundwater deficits over time (Aspen 2018; BLM 2012).

## 4 Conclusion

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Based on the analysis and assumptions presented herein, there is sufficient on-site groundwater availability to satisfy the DHSP construction and O&M water demand of 782 AF over a 30-year period. Overdraft is defined as the condition of a groundwater basin where the average annual amount of water extracted over at least a 10-year period exceeds the average annual inflow of water to the basin (California Water Code Section 10735(a)). According to this definition of overdraft, the CVGB is not currently in overdraft considering observed groundwater levels are relatively stable across the CVGB and have remained so even during periods of below average precipitation such as the 2014 to 2016 water years, as discussed in Section 3.1.3.1.1. In addition, based on the updated water demands for already constructed projects and reasonably foreseeable projects, the CVGB is not forecast to be in overdraft for at least the next 10 years according to the estimated water budget. While a reduction in groundwater in storage is predicted to occur during the second and third years of multiple-dry-year conditions, the deficit is small ( $\leq 0.02\%$ ) compared to the total volume of groundwater in storage and the deficit is predicted to be erased during normal water years. Under present conditions, and based on the assumptions used in calculating the groundwater availability projections shown in Section 3.2.3, the CVGB is not currently in overdraft or predicted to be in overdraft condition even during multiple-dry water years. Overdraft of the CVGB would only occur after 10 years of groundwater outflow exceeding inflow, either as a consequence of 10-years of below average precipitation (i.e., a 10-year drought) or if groundwater extraction in the CVGB were to increase significantly, such as for construction and operation of the Eagle Crest Pumped Storage Project, neither of which are likely to occur at this time.

That said, as required by MM WAT-2, water offset provisions shall be initiated in the first year where the CVGB is considered to be in overdraft. The condition of overdraft for the CVGB shall be evaluated as a whole over at least a 10-year period and rely upon long-term empirical precipitation, groundwater level, and groundwater extraction data.

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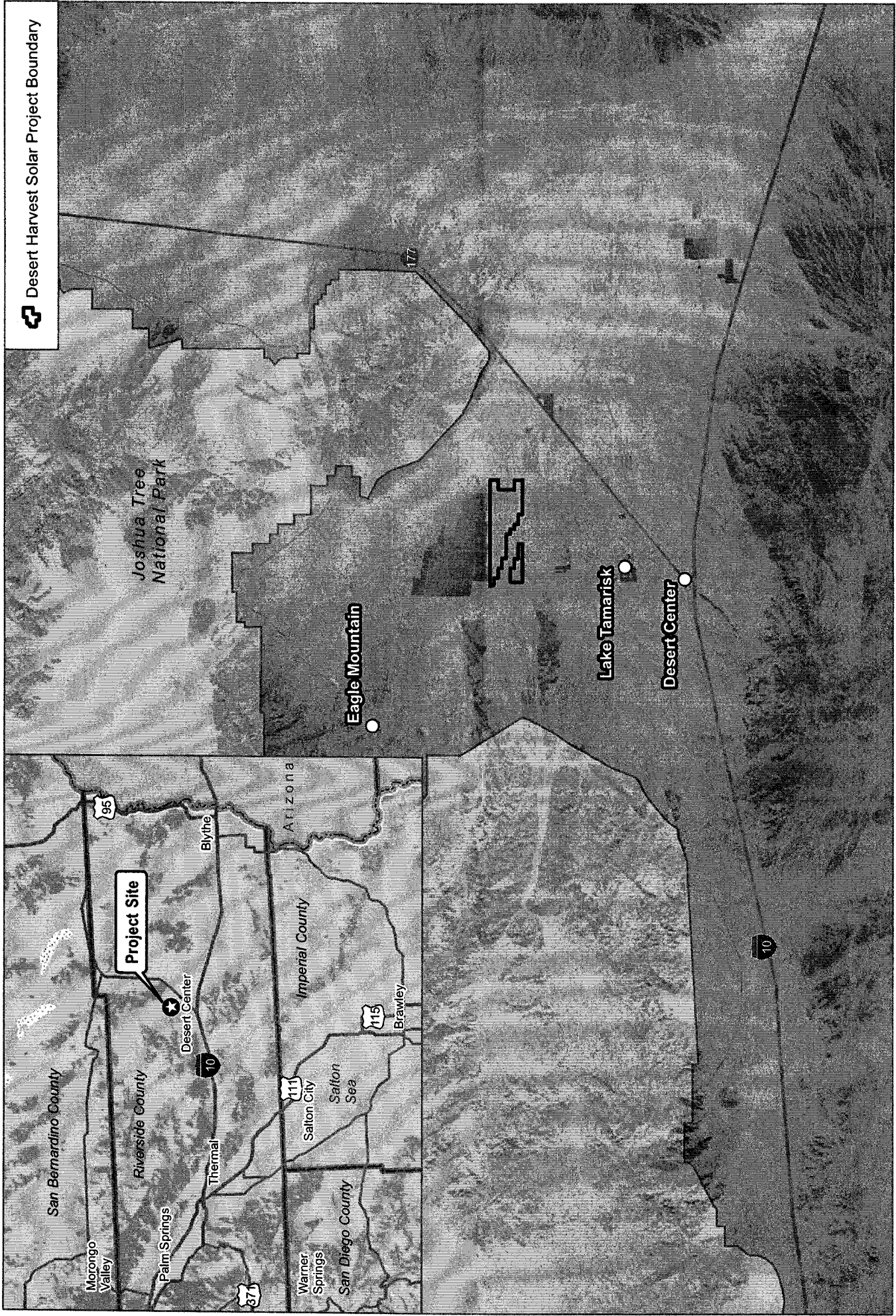
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## 6 List of Preparers

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This Water Supply Assessment was prepared by Dudek hydrogeologists Trey Driscoll (PG No. 8511, CHG No. 936) and Devin Pritchard-Peterson.





SOURCE: ESRI; County of Riverside



**FIGURE 1**  
Regional Location  
Desert Harvest Solar Project Water Supply Assessment



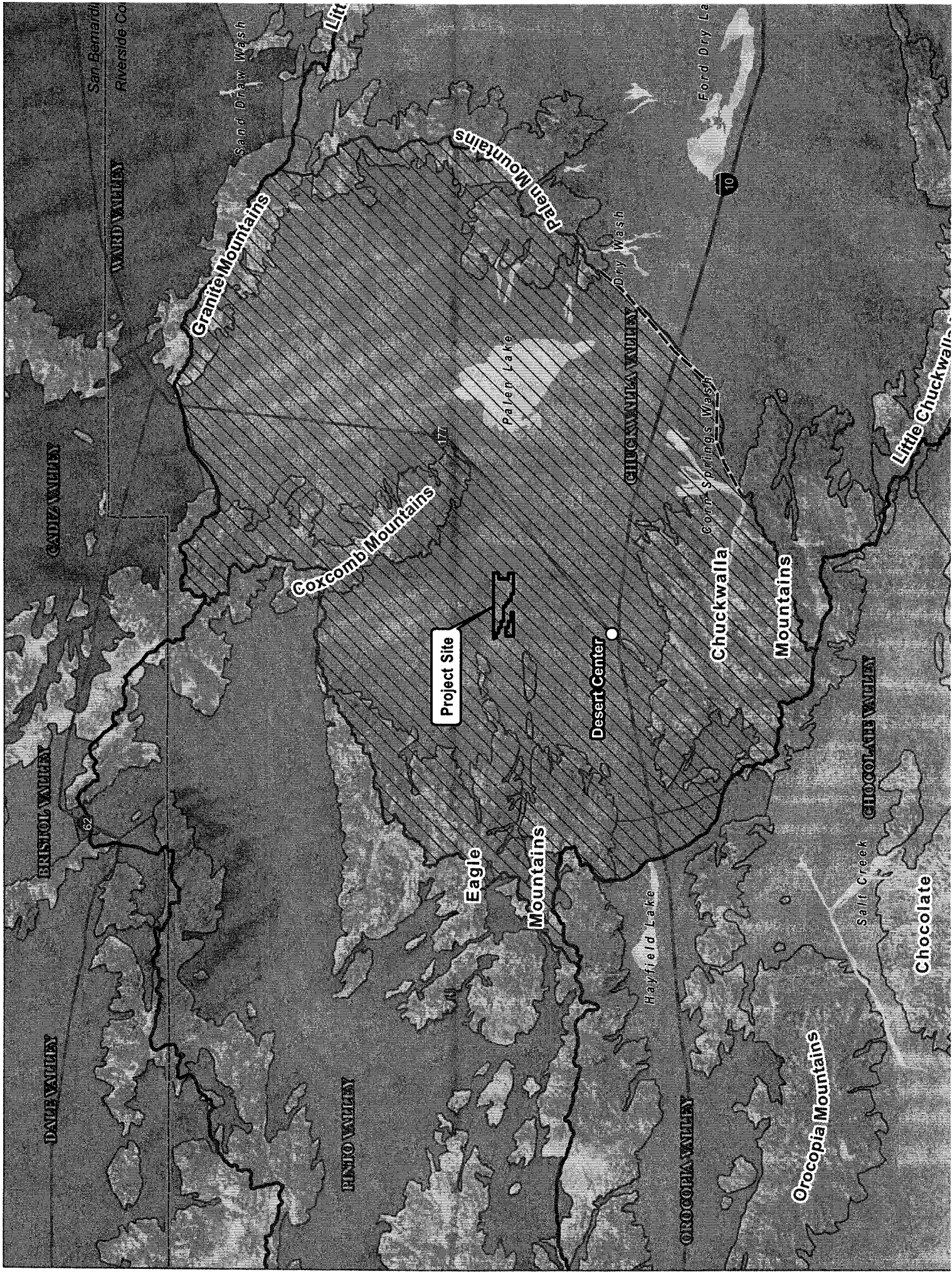
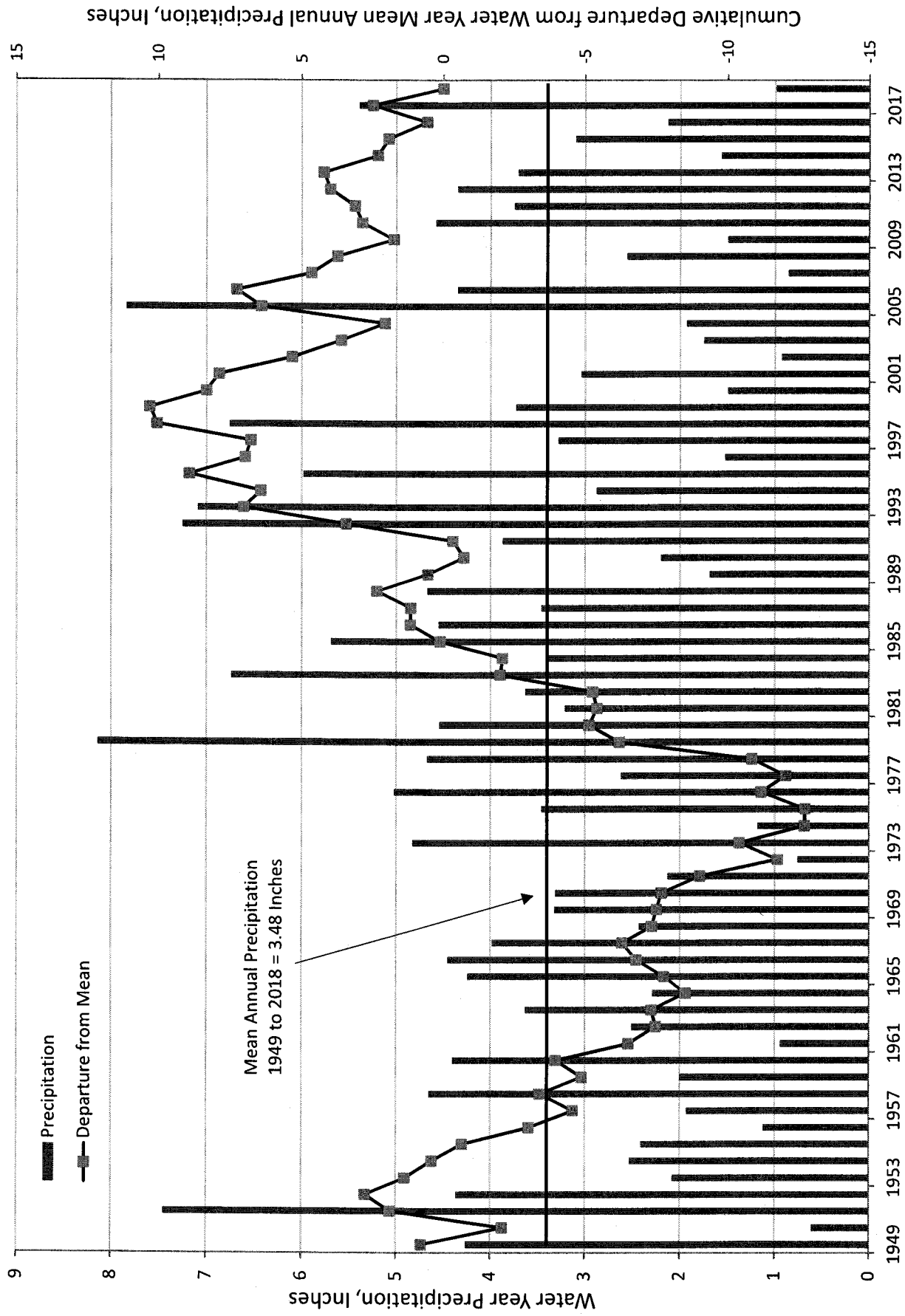
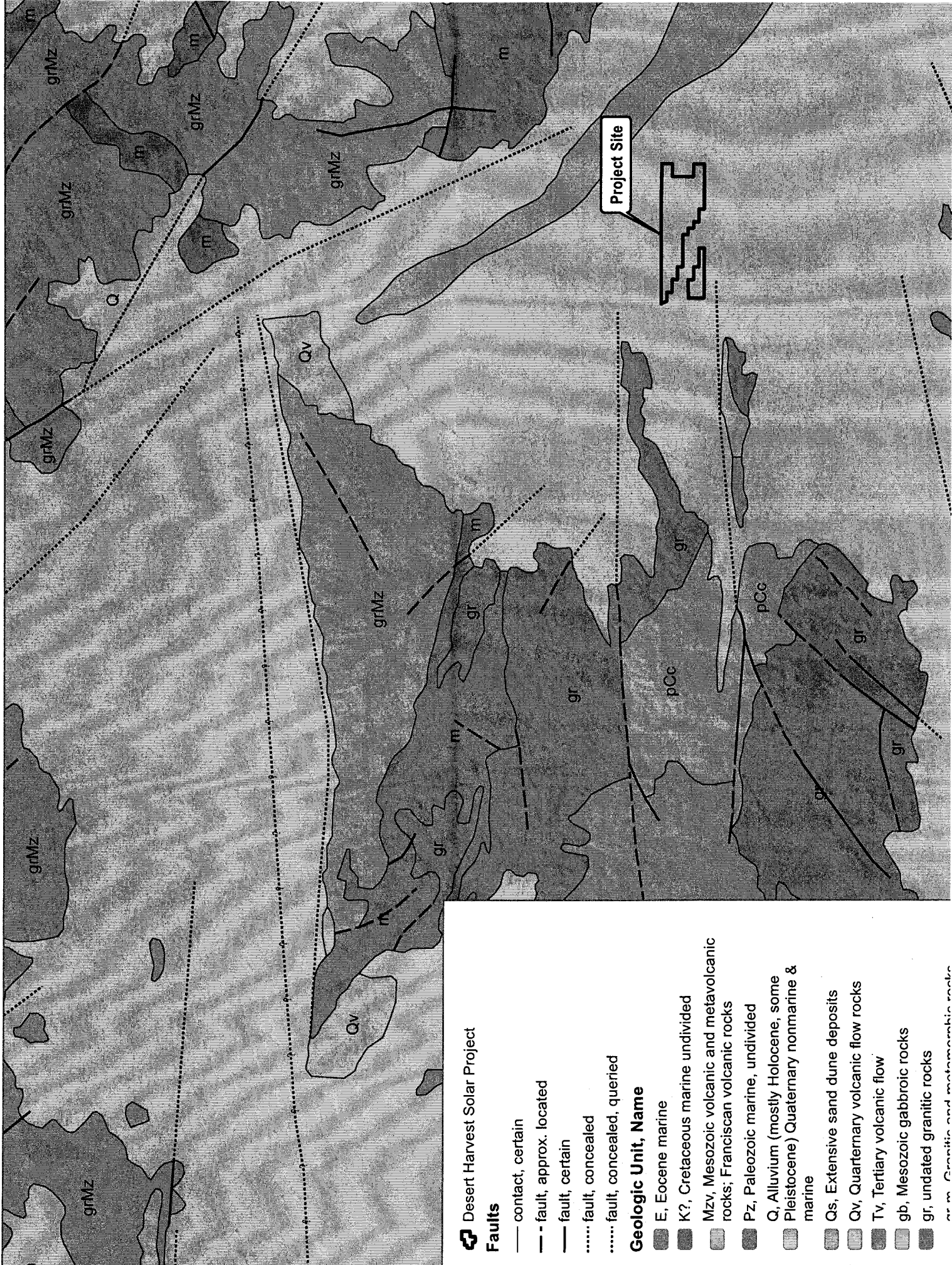


Figure 3. Water-Year Precipitation Data Blythe Airport Station Rain Gauge 1949 to 2018







**Desert Harvest Solar Project**

**Faults**

- contact, certain
- - fault, approx. located
- fault, certain
- ..... fault, concealed
- · - · fault, concealed, queried

**Geologic Unit, Name**

- E, Eocene marine
- K?, Cretaceous marine undivided
- Mzv, Mesozoic volcanic and metavolcanic rocks; Franciscan volcanic rocks
- Pz, Paleozoic marine, undivided
- Q, Alluvium (mostly Holocene, some Pleistocene) Quaternary nonmarine & marine
- Qs, Extensive sand dune deposits
- Qv, Quaternary volcanic flow rocks
- Tv, Tertiary volcanic flow
- gb, Mesozoic gabbroic rocks
- gr, undated granitic rocks

gr, m, Granitic and metamorphic rocks

Figure 5. Desert Sunlight Monitoring Program—Project Well 1 Hydrograph  
 (State Well No. 04S015E22P001S)

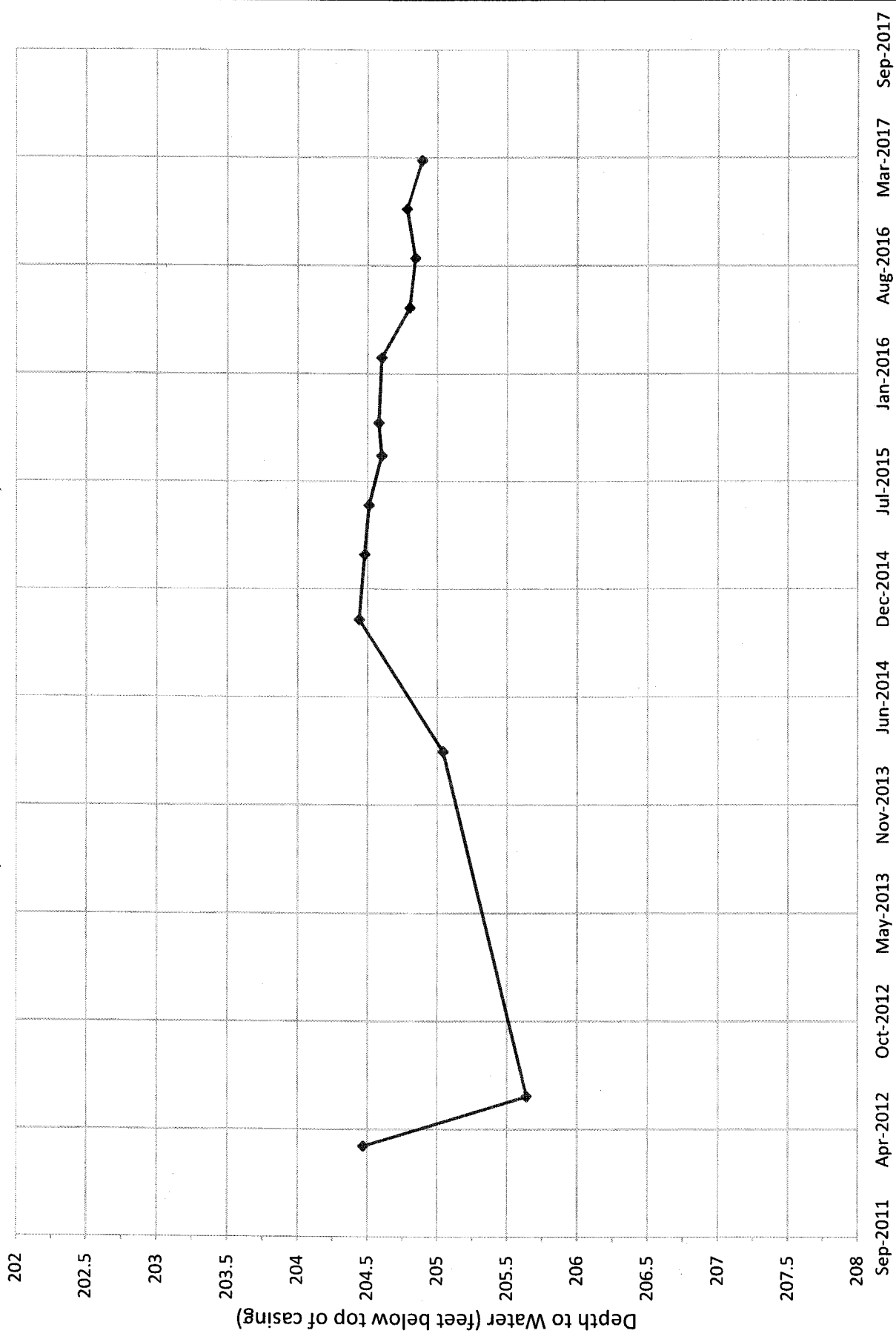
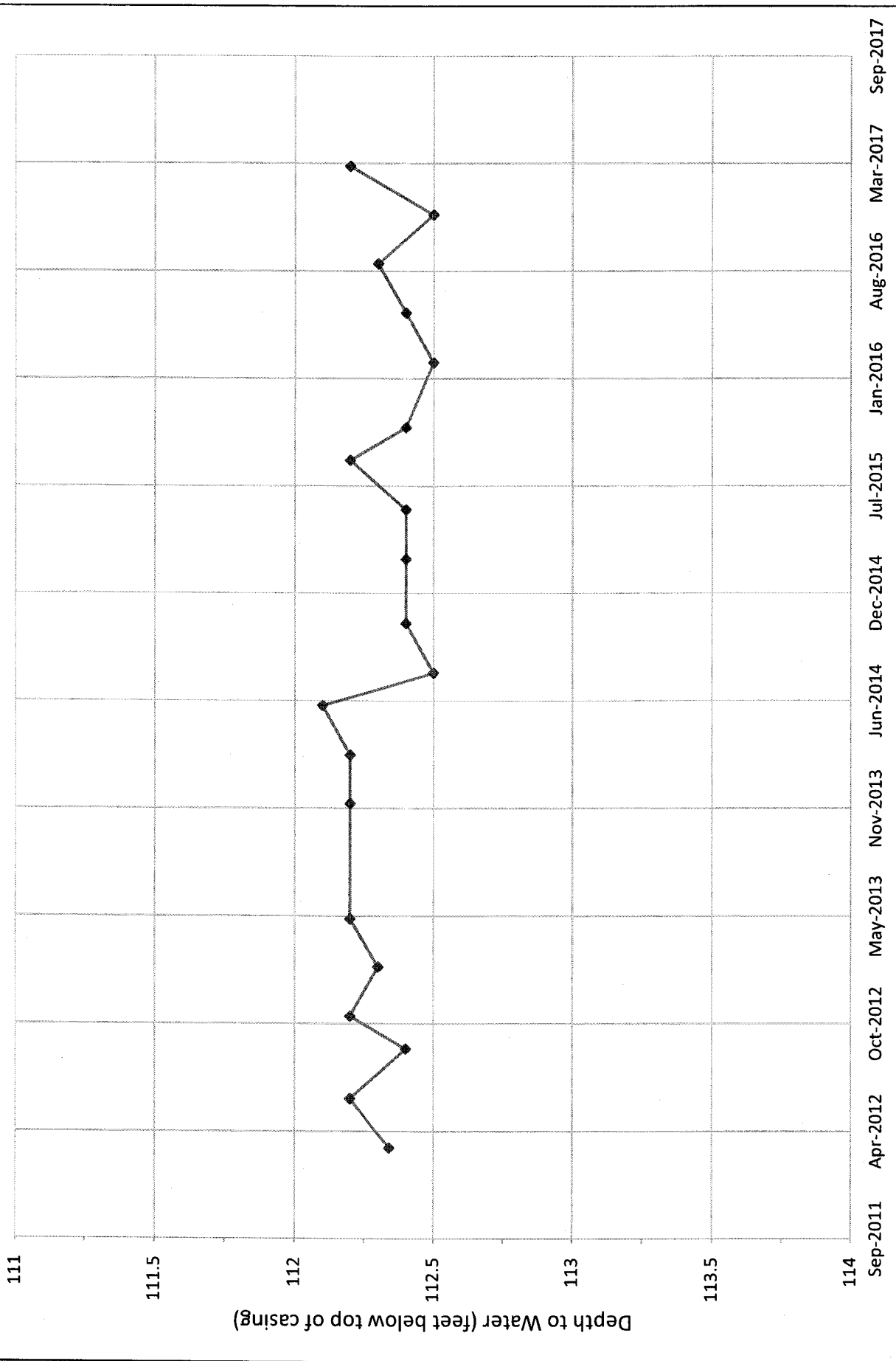
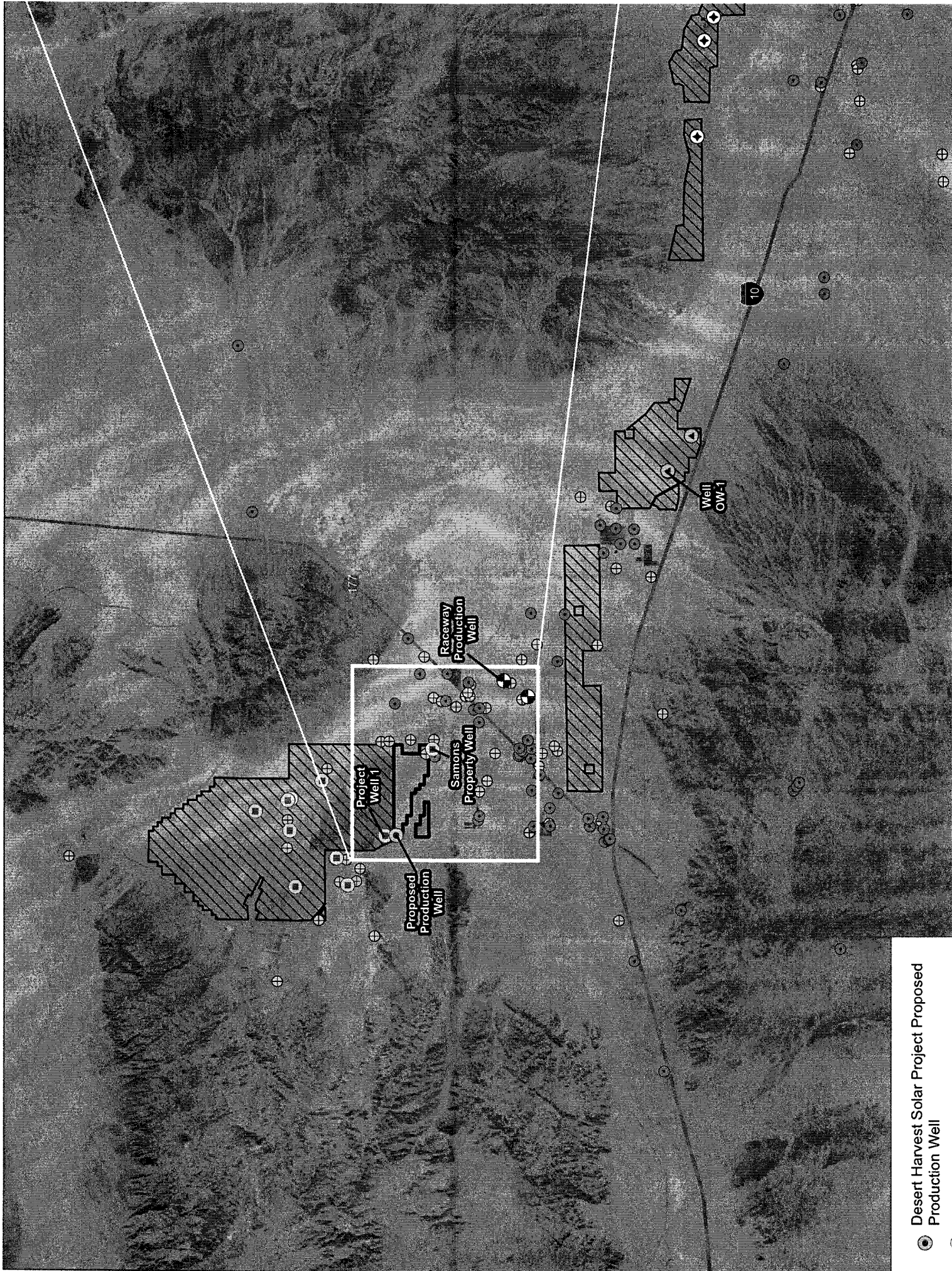


Figure 6. Desert Sunlight Monitoring Program—Samons Property Well Hydrograph  
 (State Well No. 05S016E07M002S)

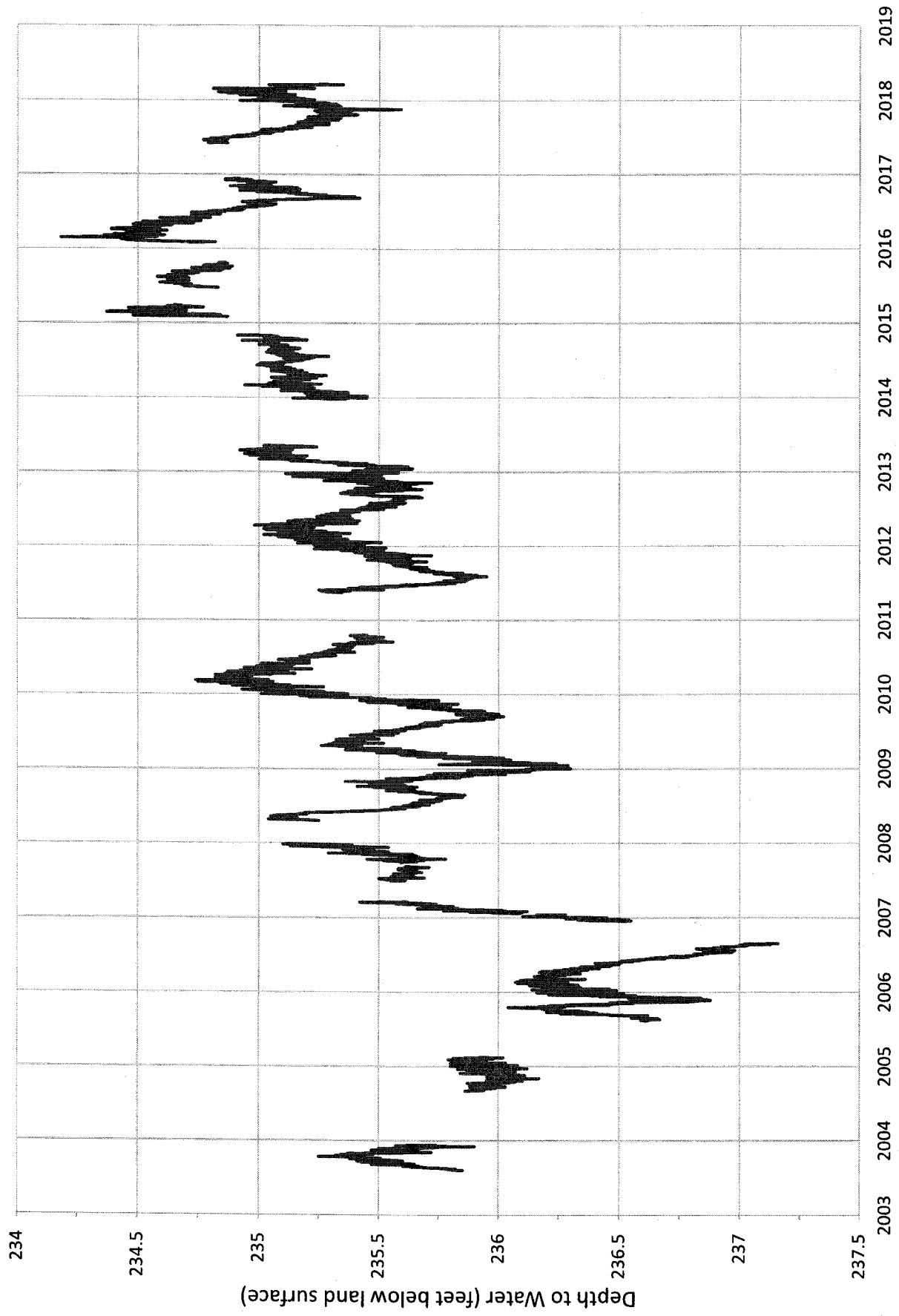






Desert Harvest Solar Project Proposed  
Production Well

Figure 8. USGS Well 007S020E28C001S Hydrograph



**Attachment C**  
Proposed Mitigation Measure Language



**ATTACHMENT C**  
**Proposed Language for Mitigation Measures**

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**Proposed language for MM WAT-2:**

For any water year following a year during which the Chuckwalla Valley Groundwater Basin (CVGB) was in overdraft conditions and water was used for the Desert Harvest Solar Project (DHSP), the project owner shall either offset or avoid using CVGB water to meet water supply requirements associated with construction, operation and maintenance, or decommissioning of the DHSP. The purpose of this measure is to avoid contributions of the project to overdraft conditions in the CVGB, regardless of the magnitude of the project's incremental contribution to such conditions.

The updated WSA submitted to the BLM projects that overdraft conditions in the CVGB are not currently present and may not be present during each year of project construction and operations as previously projected in the WSA included as Appendix E to the EIS (Dudek, 2019) The condition of overdraft for the CVGB is as defined in California Water Code Section 10735(a), where overdraft is the condition of a groundwater basin where the average annual amount of water extracted over at least a 10-year period exceeds the average inflow of water into the basin. During the first year in which the CVGB is considered to be in overdraft, the project owner may either offset groundwater water by recharging the CVGB with an out-of-basin source, or the project owner may implement in-basin water conservation measures to replace any water consumed from the CVGB on an acre-foot by acre-foot bases. Each of these options is described below. The project owner shall verify implementation of these actions in an annual report to the BLM.

- **Out-of Basin Water Source.** To offset groundwater pumped on site (or very nearby the site if offsite wells are used), the project owner may purchase water from a source outside of the CVGB and use this water to recharge the CVGB via recharge ponds within the CVGB, such as the planned Upper Chuckwalla Groundwater Basin recharge pond under the management of Metropolitan Water District. Out-of-basin water may not be trucked to the project site from outside of the basin. Water shall be replaced on a 1:1 basis. Out-of-basin water sources may include water obtained through the Hayfield Lake / Chuckwalla Valley Groundwater Conjunctive Use Project administered by the Metropolitan Water District (MWD) of Southern California. All water used to offset on-site pumping shall originate from outside the CVGB and shall recharge only the CVGB (and not any other basin, including hydrologically connected basins). On-site pumping may not occur until the associated recharge has begun.
- **In-Basin Water Conservation.** CVGB water may be consumed towards project purposes only if all CVGB water consumed is "replaced" on an acre-foot by acre-foot basis through implementation and/or participation by the project owner in a Forbearance and Fallowing Program within the CVGB, as described below.

*Implement a Forbearance and Fallowing Program.* The project owner may enter into a contractual agreement with willing land owner(s) and/or lessee(s) to fallow fields which are currently irrigated. The contract shall specify the duration of fallowing, during which time no water may be applied to the contracted field. Each field which is fallowed under this program must be located within the CVGB and must receive its water supply from the CVGB. The land owner(s) and/or lessee(s) cannot be simultaneously contracting with another entity to fallow the same fields, unless agreed upon by all parties.

*Participate in a Forbearance and Fallowing Program.* The project owner may participate in a program implemented within the CVGB by another entity, where such a program meets the requirements described in the preceding bullet, and each field fallowed through this collaborative effort is located within the CVGB and receives its water supply from the CVGB.

The out-of-basin water source and in-basin water conservation measures described above may be implemented individually or in congruence with each other, as is most effective to ensure that no net consumption of CVGB water occurs during years of overdraft conditions. The project owner shall submit

**ATTACHMENT C**  
**Proposed Language for Mitigation Measures**

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an annual report to the BLM which verifies that one or more of the actions described above are implemented to ensure that no net consumption of CVGB water occurs during any year in which the CVGB is in overdraft conditions, regardless of the DHSP's incremental contributions to such conditions.

The applicability of MM WAT-3 and MM WAT-7 are contingent upon how this MM WAT-2 is implemented, as described below.

- If groundwater pumped from the CVGB is used in conjunction with an out-of basin water source and in-basin water conservation measures, the DHSP Environmental Monitor(s) shall verify that all groundwater monitoring and reporting requirements identified in MM WAT-3 (Groundwater Drawdown Monitoring and Reporting Plan) and MM WAT-7 (Colorado River Water Supply Plan) are implemented.

The Right-of-Way Grant holder, its successors, heirs and assigns may not assert any claim to or interest in any water right to surface or groundwater associated with the project site, project construction, or operations, provided, however, that the applicant may use groundwater consistent with the terms and conditions of the project's Right-of-Way Grant(s).

**Proposed language for MM WAT-7:**

At any time that the BLM and/or Project Owner determine, based on the results of the Groundwater Drawdown Monitoring Plan (MM WAT-3), that groundwater withdrawals will likely reach the Accounting Surface during the life of the project, or 5 feet or more of drawdown is identified 1 mile from the Project site within the well monitoring network, the Project Owner must develop a Colorado River Water Supply Plan (Plan). This Plan will be submitted to the BLM and the Colorado River Basin Regional Water Quality Control Board (RWQCB) and County of Riverside for review and approval, and to the Metropolitan Water District of Southern California (MWD) for review and comment. The Plan shall identify measures that will be taken to replace water on an acre-foot to acre-foot basis, if the project results in consumption of any water from below the Colorado River Accounting Surface, towards the purpose of ensuring that no allocated water from the Colorado River is consumed without entitlement to that water.

The Plan shall describe that groundwater monitoring activities and quarterly data reports required in compliance with MM WAT-3 (Groundwater Drawdown Monitoring and Reporting Plan) will be closely reviewed for depth to groundwater information, and proximity of the depth of project-related groundwater pumping to the Colorado River Accounting Surface of 234 feet above mean sea level (amsl). The Plan shall further describe that if project-related groundwater pumping draws water from below 234 feet amsl, the following shall occur:

1. All groundwater pumping shall immediately cease,
2. Based on groundwater monitoring data, the quantity of groundwater pumped from below 234 feet amsl shall be recorded, and
3. The project owner shall implement water conservation/offset activities to replace Colorado River water on an acre-foot by acre-foot basis.

In order to effectively implement item (3) above, the Plan shall include the following information:

- Identification of water conservation / offset activities to "replace" the quantity of water diverted from the Colorado River;
- Identification of any required permits or approvals and compliance of conservation / offset activities with CEQA and NEPA;

**ATTACHMENT C**  
**Proposed Language for Mitigation Measures**

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- An estimated schedule of completion for each identified activity;
- Performance measures that would be used to evaluate the amount of water replaced by each identified activity; and
- Monitoring and reporting protocol to ensure that water conservation / offset activities are effectively implemented and achieve the intended purpose of replacing Colorado River water diversions.

The project owner shall collaborate with the BLM, the Colorado River RWQCB, and/or the MWD, as appropriate, in order to identify acceptable water conservation / offset activities for the purposes of the Plan, with “acceptable” activities being those that are considered environmentally, physically, and economically feasible, while also effectively resulting in the replacement of Colorado River water. A number of water conservation / offset activities that have been considered and determined to not be viable and therefore may not be identified in the Plan include the following:

- Irrigation improvements in the Palo Verde Irrigation District (water unused by the PVID becomes available to MWD per the 2003 Colorado River Water Delivery Agreement executed by MWD, the Secretary of the Interior, Imperial Irrigation District, Coachella Valley Water District, and San Diego County Water Authority);
- Purchase of water allotments allocated by the Department of the Interior (all Colorado River water available to California in shortage, normal, or Intentionally Created Surplus conditions is already allocated and its use is limited to each entity’s service area under executed water delivery contracts);
- Implementation of conservation programs in floodplain communities (all water unused by holders of higher priorities becomes available to MWD per the water delivery contracts which have been executed by the Department of the Interior);
- and Participation in the BLM’s Tamarisk Removal Program (use of Colorado River water by phreatophytes such as tamarisk is not charged as a use of water for U.S. Supreme Court Decree accounting purposes by the U.S. Bureau of Reclamation).

If the project owner has filed an application to the U.S. Bureau of Reclamation (USBR) to obtain an allocation of water from the Colorado River and such allocation is granted, it may be used to satisfy some or all of the water conservation offsets on an acre-foot per acre-foot basis. However, the filing of an application for allocation of Colorado River water does not guarantee that such an allocation will be issued. In addition, all of California’s apportionment to use of Colorado River water during shortage, normal, and Intentionally Created Surplus conditions has already been allocated by the Department of the Interior. Therefore, unless the project owner currently holds entitlement to the use of Colorado River water, it shall not be assumed that an allocation will be granted.

**Proposed language for MM VEG-10:**

The project owner will contract a qualified biologist to prepare and submit a Desert Dry Wash Woodland Monitoring and Reporting Plan to BLM, Riverside County, and the Resource Agencies for review and approval and to the Joshua Tree National Park (JTNP) for review and comment if the results of the groundwater monitoring program under MM WAT-3 indicate that the project pumping has resulted in water level decline of 1 foot or more 1 mile from the Project site within the monitoring well network. In this event, the project owner will reduce groundwater pumping until water levels stabilize or recover, provide for temporary supplemental watering, or compensate for additional impacts to desert dry wash woodland (Blue Palo Verde–Ironwood Woodland) at the ratio of 3:1, consistent with MM VEG-6. Estimated acreage of additional dry wash woodland impacts will be submitted to BLM, Riverside County, and the Resource Agencies for approval. Upon approval, the project owner will initiate compensation according to the

**ATTACHMENT C**  
**Proposed Language for Mitigation Measures**

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requirements and conditions for habitat compensation as described in MM VEG-6. Upon approval, the project owner will finalize and implement the Plan. The Desert Dry Wash Woodland Monitoring and Reporting Plan will outline the following information and actions:

1. Prior to project operations, the baseline health and vigor of groundwater-dependent plant species (principally desert ironwood and blue palo verde but also other species such as smoke tree and crucifixion thorn would be included) will be recorded within four zones: immediately off-site at the project boundary, and at ¼-mile, ½-mile and 1-mile distances from proposed project groundwater supply well locations. At least one “control” site, at least 2 miles from the project site, will also be sampled. The number of individuals for each of the target species to be sampled at each site will be large enough to provide valid comparison of data among sites.
2. A qualified botanist or plant physiologist will develop or adapt a sampling protocol to be carried out in desert dry wash woodland at each sampling zone (above) and the control site to monitor stress and mortality of target plants once operations begin. The protocol will include a measure of pre-dawn water potential or other appropriate indicator or water stress, as measured by standard plant physiology techniques.
3. The Desert Dry Wash Woodland Monitoring and Reporting Plan will identify what constitutes a significant difference in plant stress or mortality under this mitigation measure. If a significant difference in plant stress or mortality is shown at one or more sample locations in comparison to the control site, the project owner will coordinate with BLM, Riverside County, and CDFG to interpret the results. The sample site and control site data will be evaluated in terms of the project’s groundwater usage, climate factors, and groundwater monitoring data collected under MM WAT-3. If plant stress or mortality is determined to be related to project activities, then the project owner will either refrain from pumping, reduce groundwater pumping to allow for recovery of the groundwater table, or provide additional habitat compensation as described below.
4. Monthly Desert Dry Wash Woodland Monitoring summary memos will be submitted to BLM, CDFG, and Riverside County during the construction period of the project. In addition, annual Desert Dry Wash Woodland Monitoring reports will be submitted for at least the first 3 years following completion of construction of the project or until the defined success criteria are achieved, whichever is later. The summary memos will contain the monitoring data required as part of the monitoring program requirements under MM WAT-3. In addition, each Desert Dry Wash Woodland Monitoring Report will provide maps and text discussion of each study site, changes in plant health and vigor, changes in groundwater levels in the production wells, and the year’s monitoring data.
5. At the conclusion of the three-year monitoring period or until the defined success criteria are achieved, whichever is later, for Desert Dry Wash Woodland following completion of project construction, the project owner, Riverside County, and BLM will jointly evaluate the effectiveness of the Desert Dry Wash Woodland Monitoring and Reporting Plan and determine if monitoring frequencies or procedures should be revised, extended to the operation and decommissioning periods, or eliminated. Should additional data be forthcoming to demonstrate that this potential impact is not verifiable or attributable to this specific project or found inconsistent with state or federal statute, it may be modified or eliminated.

**Attachment D**  
Cultural Resources Assessment for Proposed  
Amendments to the Desert Harvest Solar Project  
(PENDING)



**PALEOWEST**  
archaeology

3990 Old Town Ave Suite C101 | San Diego, CA 92110 | 619.210.0199 | paleowest.com

July 12, 2019

Mr. James Barnes  
Associate State Archaeologist  
Bureau of Land Management  
California State Office  
2800 Cottage Way, W-1623  
Sacramento, CA 95825

RE: Cultural Resources Assessment for Proposed Amendments to the Desert Harvest Solar Project

Dear Mr. Barnes,

PaleoWest Archaeology (PaleoWest) has prepared this memorandum in support of the Desert Harvest Solar Project (DHSP or Project), a solar photovoltaic project approved for construction on BLM-managed land in Riverside County north of Desert Center immediately east of Kaiser Road. During permitting of the DHSP, archaeological sites were assessed for direct, indirect and cumulative effects (Akyüz, 2012; Smallwood et al. 2012; and Tennyson and Spelts 2019). All sites were evaluated for inclusion in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). Review of the Project found that historic properties are located in the direct and indirect APE. A Project Memorandum of Agreement (MOA) was developed to resolve adverse effects to historic properties affected by the Project (BLM 2019a).

The purpose of this memo is to analyze potential impacts to the historic properties previously identified for proposed changes to the Project.

## RESOURCE ANALYSIS

DHSP proposes to construct, operate, and decommission battery storage units at the Project in the form of containers, located adjacent to inverters, which would be constructed wholly within the disturbance area of the already-approved DHSP ROW Grant boundary/perimeter fence. The battery storage systems would be distributed throughout the project's solar arrays by co-locating a single Battery Energy Storage System (BESS) container with the project's block inverters, with the BESS and the inverter housed on the same pad with separate housings.

Each BESS container would contain batteries housed on racks, monitoring equipment, fire detection and suppression systems, lighting, and cooling equipment. DHSP would utilize up to 40 containers. Each container would be approximately 70' long by 12' wide and 13' tall. For detailed photo examples and diagrams, please refer to the Desert Harvest Solar Project Plan of Development (POD), Figures 1-1 through 1-7 as well as Appendix 2 for equipment specifications.

The Project also plans to construct an additional access road for use as a secondary emergency access that would connect the project site to Kaiser Road during operations. See Attachment A of the Determination of NEPA Adequacy (BLM 2019b) for maps of the substation design, which include the location of the primary and secondary emergency access roads. The additional road would allow access from Kaiser Road to the north and south of the proposed onsite substation and connect to the previously proposed internal access roads at the solar arrays and laydown areas. The road is proposed entirely within the previously

analyzed and approved footprint of the project site and construction would occur according to the description of access roads provided in Section 2.5.4 of the Final Environmental Impact Statement (FEIS; BLM 2012), except that there would be one primary access road and one secondary emergency access road connecting the facility to Kaiser Road in the northwest portion of the site. This secondary emergency access road is a minor change to the Project Description as identified in the POD.

Thirdly, the project proposes to revise groundwater-related mitigation measures.

Historic properties, or sites being treated as eligible for inclusion to the NRHP include:

- P-33-010915,
- P-33-010916,
- P-33-010917,
- P-33-010918,
- P-33-010919,
- P-33-010920,
- P-33-010921,
- P-33-010922,
- P-33-010923,
- P-33-010924,
- P-33-010925,
- and P-33-010928

Resources in the indirect effects APE include:

- CA-RIV-53t (the Coco-Maricopa Trail)
- CA-RIV-1383 (The North Chuckwalla Valley Petroglyph District)
- CA-RIV-18392
- The Desert Training Center/California-Arizona Maneuvers Area (DTC/C-AMA)

This memo only addresses cultural resources effects for installation of BESS containers and the additional access road. Revision of groundwater-related mitigation measures does not have any bearing on historic properties in the Project area. All proposed changes are located in portions of the project that have been previously surveyed and documented for cultural resources (see Akyüz, 2012; Smallwood et al. 2012; and Tennyson and Spelts 2019)

## EFFECTS ANALYSIS

The MOA for the Project and Project Monitoring and Discovery Plan have been developed to guide how to resolve adverse effects to or avoid historic properties.

## DIRECT EFFECTS

The installation of BESS containers and proposed additional access road will have no direct effect on historic properties in the Project area. All historic properties are located along the gen-tie and out of the main solar array. All proposed changes would be located in portions of the solar array or the entrance to the facility.

## **INDIRECT EFFECTS**

The Project MOA outlines proposed resolutions to adverse effects the Project will have on historic properties in the indirect APE. The addition of BESS containers and the additional access road will introduce new elements to the landscape. However, the proposed changes represent only a minimal modification to the viewshed. Summaries for resources analyzed in the indirect effects APE are provided below.

### **CA-RIV-53t – The Coco-Maricopa Trail**

CA-RIV-53T have been determined eligible for inclusion to the NRHP under Criterion A. The site is located near the terminus of the approved gen-tie at the Red Bluff substation. The MOA requires that a public interpretation product will be developed in consultation with Native American tribes.

The proposed changes to the Project, including the addition of BESS containers and an additional access road, do not create a significant change to the visual landscape and do not introduce new impacts to the site beyond what has already been approved for the Project. The proposed changes will have no adverse effect on the resource.

### **CA-RIV-1383 – North Chuckwalla Petroglyph National Register District**

The North Chuckwalla Petroglyph National Register District is eligible under NRHP Criterion A. The site is located to near the terminus of the approved gen-tie at the Red Bluff substation (southwest of the substation). The MOA requires that a public interpretation product will be developed in consultation with Native American tribes.

The proposed changes to the Project, including the addition of BESS containers and an additional access road, do not create a significant change to the visual landscape and do not introduce new impacts to the site beyond what has already been approved for the Project. The proposed changes will have no adverse effect on the resource.

### **CA-RIV-18392**

CA-RIV-18392 is a moderately dense historic scatter associated with the DTC/C-AMA. It is located east/southeast of the solar array. The project will have an indirect cumulative effect on the Criterion A values of the property. The MOA requires that a public interpretation product will be developed that includes archival quality digital scans of historic documents related to the DTC/C-AMA housed in BLM offices in California.

The proposed changes to the Project, including the addition of BESS containers and an additional access road, do not create a significant change to the visual landscape and do not introduce new impacts to the site beyond what has already been approved for the Project. The proposed changes will have no adverse effect on the resource.



## DTC/C-AMA

The Project is located within the boundaries of the DTC/C-AMA. According to the MOA, the Project will have an indirect cumulative effect on the Criterion A-C values of the resource. The MOA requires that a public interpretation product will be developed that includes archival quality digital scans of historic documents related to the DTC/C-AMA housed in BLM offices in California.

The proposed changes to the Project, including the addition of BESS containers and an additional access road, do not create a significant change to the visual landscape and do not introduce new impacts to the site beyond what has already been approved for the Project. The proposed changes will have no adverse effect on the resource.

## SUMMARY AND CONCLUSION

The inclusion of BESS containers and the addition of a secondary access road will not introduce new impacts to historic properties affected by the Project. The previous analysis conducted on the historic properties in the direct and indirect APE can be considered adequate for the purposes of the proposed changes.

If you have any questions regarding the proposed changes to the DHSP or for any other Project matters, please don't hesitate to contact me at [mtennyson@paleowest.com](mailto:mtennyson@paleowest.com).

Sincerely,



Matthew Tennyson, M.A., RPA  
Senior Archaeologist  
PaleoWest Archaeology

Cc: Devon Muto, EDF Renewables  
George Kline, BLM Palm Springs South Coast Field Office

### References:

Akyüz, Linda

2012 *A BLM Class III Archaeological Resources Inventory for the Desert Harvest Solar Farm Project and Three Gen-Tie Alternatives Desert Center Vicinity, Riverside County, California.* Prepared for the U.S. Department of Interior, Bureau of Land Management, Palm Springs, California. Prepared by Chambers Group with Contributions by Applied Earthworks.

**Bureau of Land Management (BLM)**

- 2012 Final Environmental Impact Statement for the Desert Harvest Solar Farm Project. Bureau of Land Management Palm Springs South Coast Field Office, Palm Springs, California.
- 2019a Memorandum of Agreement Between the Bureau of Land Management-Palm Springs South Coast Field Office and the California State Historic Preservation Officer Regarding the Desert Harvest Solar Farm Project Riverside County, California.
- 2019b Determination of NEPA Adequacy (DNA), Desert Harvest Solar Project – Groundwater Mitigation Measures, Battery Storage, and Access Road Variance.

**Smallwood, Josh, Susan K. Goldberg, Victoria Smith, and M. Colleen Hamilton**

- 2012 Assessment of Indirect and Cumulative Effects to Historic Properties for Desert Harvest Solar Farm Project, Desert Center Vicinity, Riverside County, California. Prepared for Bureau of Land Management Palm Springs Field Office, Palm Springs, California.

**Tennyson, Matthew and Brian Spelts**

- 2019 Restulst of Field Inspections at the Desert Harvest Solar Project. Letter Report Prepared for Bureau of Land Management Palm Springs Field Office, Palm Springs, California.

**MM WAT-2 Alternative Water Source and Groundwater Offsets.**

**Proposed language for MM WAT-2:**

For any water year following a year during which it is projected that the Chuckwalla Valley Groundwater Basin (CVGB) would be affected by ~~was~~ in overdraft conditions, and water was used for the Desert Harvest Solar Project (DHSP), the project owner shall either offset or avoid using CVGB water to meet water supply requirements associated with construction, operation and maintenance, or decommissioning of the ~~Desert Harvest Solar Project (DHSP)~~ DHSP. The purpose of this measure is to avoid contributions of the project to overdraft conditions in the CVGB, regardless of the magnitude of the ~~project's~~ project's incremental contribution to such conditions.

~~This measure shall be implemented based on projections of~~ The updated WSA submitted to the BLM ~~projects that overdraft conditions provided in Table 4.20-5 (Estimated Cumulative Budget for the Chuckwalla Valley Groundwater Basin (afy)) of this EIS in the CVGB are not currently present and may not be present during each year of project construction and operations as previously projected in the Water Supply Assessment (WSA) included as Appendix E, or based on revised projections to the EIS (Dudek, 2019) The condition of overdraft conditions provided by the project owner (or for the CVGB is as defined in California Water Code Section 10735(a representative of the project owner) to the BLM Hydrologist in -), where overdraft is the form~~ condition of a revised WSA prepared in accordance with Senate Bill 610, and approved of by ~~groundwater basin where the BLM Hydrologist. The project owner may choose to revise projections of overdraft conditions if average annual amount of water extracted over at least a 10-year period exceeds the cumulative projects scenario upon average inflow of water into the basin. During the first year in which existing the CVGB is considered to be in overdraft projections are based changes such that certain water-consuming projects in the cumulative scenario would not occur and associated overdraft conditions also would not occur, or would be less substantial than currently projected. It is reasonable and appropriate to use projections of overdraft as the trigger for this mitigation measure, as opposed to using actual data obtained through groundwater monitoring, because the presence of overdraft requires long-term monitoring efforts in order to identify; although the BLM is presently (at the time of publication of this Final EIS) implementing a groundwater monitoring program throughout the CVGB, monitoring results that would be useful towards characterizing overdraft in the basin will not be available for several years, at least, and therefore would not be usable for the proposed project or the purposes of this mitigation measure.~~

The WSA included as Appendix E to the EIS ~~projects that overdraft conditions in the CVGB may occur during each year of project operations, through 2043, to varying degrees of severity and decreasing over time. In order to ensure that the DHSP does not contribute to overdraft conditions during these projected years of overdraft, or revised projections of overdraft years provided by the project owner and approved of by the BLM, the project owner may either offset groundwater water by recharging the CVGW~~ CVGB with an out-of-basin source, or the project owner may implement in-basin water conservation measures to replace any water consumed from the CVGB on an acre-foot by acre-foot bases. Each of these options is described below. The project owner shall verify implementation of these actions in an annual report to the BLM.

- **Out-of Basin Water Source.** To offset groundwater pumped on site (or very nearby the site if offsite wells are used), the project owner may purchase water from a source outside of the

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CVGB and use this water to recharge the CVGB via recharge ponds within the CVGB, such as the planned Upper Chuckwalla Groundwater Basin recharge pond under the management of Metropolitan Water District. Out-of-basin water may not be trucked to the project site from outside of the basin. Water shall be replaced on a 1:1 basis. Out-of-basin water sources may include water obtained through the Hayfield Lake / Chuckwalla Valley Groundwater Conjunctive Use Project administered by the Metropolitan Water District (MWD) of Southern California. All water used to offset on-site pumping shall originate from outside the CVGB and shall recharge only the CVGB (and not any other basin, including hydrologically connected basins). On-site pumping may not occur until the associated recharge has begun.

- **In-Basin Water Conservation.** CVGB water may be consumed towards project purposes only if all CVGB water consumed is "replaced" on an acre-foot by acre-foot basis through implementation and/or participation by the project owner in a Forbearance and Following Program within the CVGB, as described below.

*Implement a Forbearance and Following Program.* The project owner may enter into a contractual agreement with willing land owner(s) and/or lessee(s) to fallow fields which are currently irrigated. The contract shall specify the duration of fallowing, during which time no water may be applied to the contracted field. Each field which is fallowed under this program must be located within the CVGB and must receive its water supply from the CVGB. The land owner(s) and/or lessee(s) cannot be simultaneously contracting with another entity to fallow the same fields, unless agreed upon by all parties.

*Participate in a Forbearance and Following Program.* The project owner may participate in a program implemented within the CVGB by another entity, where such a program meets the requirements described in the preceding bullet, and each field fallowed through this collaborative effort is located within the CVGB and receives its water supply from the CVGB.

The out-of-basin water source and in-basin water conservation measures described above may be implemented individually or in congruence with each other, as is most effective to ensure that no net consumption of CVGB water occurs during years of projected overdraft conditions. The project owner shall submit an annual report to the BLM which verifies that one or more of the actions described above are implemented to ensure that no net consumption of CVGB water occurs during any year in which the CVGB is projected to be in overdraft conditions, regardless of the DHSP's incremental contributions to such conditions, and based upon either the overdraft projections identified in the WSA included as Appendix E to this EIS, or based upon revised overdraft projections produced by the project owner and approved of by the BLM Hydrologist.

The applicability of MM WAT-3 and MM WAT-7 are contingent upon how this MM WAT-2 is implemented, as described below.

- If groundwater pumped from the CVGB is used in conjunction with an out-of basin water source and in-basin water conservation measures, the DHSP Environmental Monitor(s) shall verify that all groundwater monitoring and reporting requirements identified in MM WAT-3 (Groundwater Drawdown Monitoring and Reporting Plan) and MM WAT-7 (Colorado River Water Supply Plan) are implemented.

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The Right-of-Way Grant holder, its successors, heirs and assigns may not assert any claim to or interest in any water right to surface or groundwater associated with the project site, project construction, or operations, provided, however, that the applicant may use groundwater consistent with the terms and conditions of the project's Right-of-Way Grant(s).

**Proposed language for MM WAT-7 Colorado River Water Supply:**

At any time that the BLM and/or Project Owner determine, based on the results of the Groundwater Drawdown Monitoring Plan-

Prior to the onset of water-consuming construction activities, (MM WAT-3), that groundwater withdrawals will likely reach the Accounting Surface during the life of the project-owner shall prepare, or 5 feet or more of drawdown is identified 1 mile from the Project site within the well monitoring network, the Project Owner must develop a Colorado River Water Supply Plan (Plan) and submit this. This Plan will be submitted to the BLM and the Colorado River Basin Regional Water Quality Control Board (RWQCB) and County of Riverside for review and approval, and to the Metropolitan Water District of Southern California (MWD) for review and comment. The Plan shall identify measures that will be taken to replace water on an acre-foot to acre-foot basis, if the project results in consumption of any water from below the Colorado River Accounting Surface, towards the purpose of ensuring that no allocated water from the Colorado River is consumed without entitlement to that water.

The Plan shall describe that groundwater monitoring activities and quarterly data reports required in compliance with MM WAT-3 (Groundwater Drawdown Monitoring and Reporting Plan) will be closely reviewed for depth to groundwater information, and proximity of the depth of project-related groundwater pumping to the Colorado River Accounting Surface of 234 feet above mean sea level (amsl). The Plan shall further describe that if project-related groundwater pumping draws water from below 234 feet amsl, the following shall occur:

1. All groundwater pumping shall immediately cease,
2. Based on groundwater monitoring data, the quantity of groundwater pumped from below 234 feet amsl shall be recorded, and
3. The project owner shall implement water conservation/offset activities to replace Colorado River water on an acre-foot by acre-foot basis.

In order to effectively implement item (3) above, the Plan shall include the following information:

- Identification of water conservation / offset activities to ~~replace~~ the quantity of water diverted from the Colorado River;
- Identification of any required permits or approvals and compliance of conservation / offset activities with CEQA and NEPA;
- An estimated schedule of completion for each identified activity;
- Performance measures that would be used to evaluate the amount of water replaced by each identified activity; and
- Monitoring and reporting protocol to ensure that water conservation / offset activities are effectively implemented and achieve the intended purpose of replacing Colorado River water diversions.

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The project owner shall collaborate with the BLM, the Colorado River RWQCB, and/or the MWD, as appropriate, in order to identify acceptable water conservation / offset activities for the purposes of the Plan, with acceptable activities being those that are considered environmentally, physically, and economically feasible, while also effectively resulting in the replacement of Colorado River water. A number of water conservation / offset activities that have been considered and determined to not be viable and therefore may not be identified in the Plan include the following:

- Irrigation improvements in the Palo Verde Irrigation District (water unused by the PVID becomes available to MWD per the 2003 Colorado River Water Delivery Agreement executed by MWD, the Secretary of the Interior, Imperial Irrigation District, Coachella Valley Water District, and San Diego County Water Authority);
- Purchase of water allotments allocated by the Department of the Interior (all Colorado River water available to California in shortage, normal, or Intentionally Created Surplus conditions is already allocated and its use is limited to each entity's service area under executed water delivery contracts);
- Implementation of conservation programs in floodplain communities (all water unused by holders of higher priorities becomes available to MWD per the water delivery contracts which have been executed by the Department of the Interior); and
- and Participation in the BLM's Tamarisk Removal Program (use of Colorado River water by phreatophytes such as tamarisk is not charged as a use of water for U.S. Supreme Court Decree accounting purposes by the U.S. Bureau of Reclamation).

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If the project owner has filed an application to the U.S. Bureau of Reclamation (USBR) to obtain an allocation of water from the Colorado River and such allocation is granted, it may be used to satisfy some or all of the water conservation offsets on an acre-foot per acre-foot basis. However, the filing of an application for allocation of Colorado River water does not guarantee that such an allocation will be issued. In addition, all of California's apportionment to use of Colorado River water during shortage, normal, and Intentionally Created Surplus conditions has already been allocated by the Department of the Interior. Therefore, unless the project owner currently holds entitlement to the use of Colorado River water, it shall not be assumed that an allocation will be granted.

If the project does not result in diversion of Colorado River water (via pumping from near (within +/- 0.84 feet at the 95 percent confidence level), equal to, or below 234 feet amsl) it will not be necessary to implement the water conservation/offset activities identified in the Colorado River Water Supply Plan. However, the Plan must be approved by the BLM prior to project related groundwater pumping is initiated so that if at any time during the project it is determined that groundwater is being produced from below the Colorado River Accounting Surface of 234 feet amsl, the requirements described in this measure shall be immediately implemented, starting with the cessation of groundwater pumping.

The Colorado River Water Supply Plan is separate from the Groundwater Drawdown Monitoring and Reporting Plan required per MM WAT-3 and the Drought Water Management and Water Conservation Education Programs required per MM WAT-6. Therefore, this Plan must be developed, reviewed, approved of, and implemented as a separate, stand-alone document. Compliance with this measure shall be verified by the Environmental Monitor.

**MM-VEG-10 Prepare and Implement a Desert Dry Wash Woodland Monitoring and Reporting Plan.**

**Proposed language for MM VEG-10:**

The project owner will contract a qualified biologist to prepare and submit a Desert Dry Wash Woodland Monitoring and Reporting Plan to BLM, Riverside County, and the Resource Agencies for review and approval and to the Joshua Tree National Park (JTNP) for review and comment if the results of the groundwater monitoring program under MM WAT-3 indicate that the project pumping has resulted in water level decline of 1 foot or more 1 mile from the Project site within the monitoring well network. In this event, the project owner will reduce groundwater pumping until water levels stabilize or recover, provide for temporary supplemental watering, or compensate for additional impacts to desert dry wash woodland (Blue Palo Verde–Ironwood Woodland) at the ratio of 3:1, consistent with MM VEG-6. Estimated acreage of additional dry wash woodland impacts will be submitted to BLM, Riverside County, and the Resource Agencies for approval. Upon approval, the project owner will initiate compensation according to the requirements and conditions for habitat compensation as described in MM VEG-6. JTNP for review and comment prior to commencing project-related pumping activities. Upon approval, the project owner will finalize and implement the Plan. The Desert Dry Wash Woodland Monitoring and Reporting Plan will outline the following information and actions:

1. Prior to project operations, the baseline health and vigor of groundwater-dependent plant species (principally desert ironwood and blue palo verde but also other species such as smoke tree and crucifixion thorn would be included) will be recorded within four zones: immediately off-site at the project boundary, and at  $\frac{1}{4}$ -mile,  $\frac{1}{2}$ -mile and 1-mile distances from proposed project groundwater supply well locations. At least one "control" site, at least 2 miles from the project site, will also be sampled. The number of individuals for each of the target species to be sampled at each site will be large enough to provide valid comparison of data among sites.
2. A qualified botanist or plant physiologist will develop or adapt a sampling protocol to be carried out in desert dry wash woodland at each sampling zone (above) and the control site to monitor stress and mortality of target plants once operations begin. The protocol will include a measure of pre-dawn water potential or other appropriate indicator or water stress, as measured by standard plant physiology techniques.
3. The Desert Dry Wash Woodland Monitoring and Reporting Plan will identify what constitutes a significant difference in plant stress or mortality under this mitigation measure. If a significant difference in plant stress or mortality is shown at one or more sample locations in comparison to the control site, the project owner will coordinate with BLM, Riverside County, and CDFG to interpret the results. The sample site and control site data will be evaluated in terms of the project's groundwater usage, climate factors, and groundwater monitoring data collected under MM WAT-3. If plant stress or mortality is determined to be related to project activities, then the project owner will either refrain from pumping, reduce groundwater pumping to allow for recovery of the groundwater table, or provide additional habitat compensation as described below.
4. Monthly Desert Dry Wash Woodland Monitoring summary memos will be submitted to BLM, CDFG, and Riverside County during the construction period of the project. In addition, annual Desert Dry Wash Woodland Monitoring reports will be submitted for at least the first 3 years following completion of construction of the project or until the defined success criteria are achieved, whichever is later. The summary memos will contain the monitoring data required as

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part of the monitoring program requirements under MM WAT-3. In addition, each Desert Dry Wash Woodland Monitoring Report will provide maps and text discussion of each study site, changes in plant health and vigor, changes in groundwater levels in the production wells, and the year's year's monitoring data.

~~If results of the groundwater monitoring program under MM WAT 3 indicate that the project pumping has resulted in water level decline of 1 foot or more below the baseline trend, and vegetation monitoring for plant stress, mortality, and water potential have documented one or more of the sampling sites for the two groundwater dependent plant species as reaching the threshold (above), the project owner will reduce groundwater pumping until water levels stabilize or recover, provide for temporary supplemental watering, or compensate for additional impacts to desert dry wash woodland (Blue Palo Verde Ironwood Woodland) at the ratio of 3:1, consistent with MM VEG 6. Estimated acreage of additional dry wash woodland impacts will be submitted to BLM, Riverside County, and the Resource Agencies for approval. Upon approval, the project owner will initiate compensation according to the requirements and conditions for habitat compensation as described in MM VEG 6.~~

5. At the conclusion of the three-year monitoring period or until the defined success criteria are achieved, whichever is later, for Desert Dry Wash Woodland following completion of project construction, the project owner, Riverside County, and BLM will jointly evaluate the effectiveness of the Desert Dry Wash Woodland Monitoring and Reporting Plan and determine if monitoring frequencies or procedures should be revised, extended to the operation and decommissioning periods, or eliminated. Should additional data be forthcoming to demonstrate that this potential impact is not verifiable or attributable to this specific project or found inconsistent with state or federal statute, it may be modified or eliminated.

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Desert Harvest, LLC is proposing two changes related to the Desert Harvest Solar Project (Project): (1) addition of a Battery Energy Storage System (BESS), and (2) modification of mitigation measures WAT-2, WAT-7, and VEG-10. These changes do not affect the Project gen-tie, the only portion of the Project within County jurisdiction. BLM evaluated both modifications and, in August 2019, issued a Determination of NEPA Adequacy (DNA) finding that the Project's existing environmental analysis fully covers them. The DNA addresses these proposed changes in detail, and we offer a brief summary here.

#### 1. Addition of Battery Energy Storage System

The BESS would comprise up to 51 self-contained units, each with its own batteries, monitoring equipment, fire detection and suppression systems, lighting, and cooling equipment. Desert Harvest plans to distribute these containers throughout the project site, locating them alongside (and sharing pads with) the Project's block inverters. In total, addition of the BESS would increase the amount of inverter/storage pad size at the Project by roughly one acre. The BESS would sit entirely within the disturbance area of the Project's perimeter fence, and therefore be located entirely on BLM land. Addition of the BESS thus would not impact the Project gen-tie, the only Project component on land over which the County exercises jurisdiction.

#### 2. Modification of Groundwater-Related Mitigation Measures

The Project's existing groundwater-related mitigation measures stem from 2012 estimates that the Project would require 1,000 acre-feet of water during construction and 39 afy during operations. They also reflect equally outdated understandings of the Chuckwalla Valley Groundwater Basin (CVGB) that indicated the Project's groundwater usage might adversely affect groundwater levels in the basin. Mitigation measures WAT-2, WAT-7, and VEG-10 thus provided for immediate implementation of groundwater-related measures. Specifically, WAT-2 required additional mitigation if CVGB groundwater was pumped while the basin was *projected* to be in overdraft conditions; WAT-7 required a Colorado River Water Supply Plan; and VEG-7 required a Dry Wash Woodland Monitoring and Reporting Plan.

By contrast, Desert Harvest now expects to use only 204 acre-feet during construction and 20 afy for O&M activities. Moreover, recent monitoring has shown that groundwater levels are relatively stable across the CVGB (and have remained so even during dry periods), and the CVGB is not projected to be in overdraft for at least the next 10 years. It is thus highly unlikely that Project-related groundwater withdrawals will adversely affect the CVGB, e.g., by causing it to enter overdraft conditions. Consequently, in recent approvals for nearby projects such as the Palen Solar Project and the Desert Sunlight Solar Farm, BLM and the County have shifted away from requiring immediate implementation of groundwater-related mitigation and have instead preferred an adaptive management approach.

Desert Harvest seeks to modify mitigation measures WAT-2, WAT-7, and VEG-10 to mirror the adaptive-management approach BLM and the County have taken in recent years. These changes would only affect timing for these measures. Specifically, modified WAT-2 would require mitigation to the extent the Project uses CVGB groundwater when the CVGB actually was in overdraft conditions; modified MM WAT-7 would require a Colorado River Water Supply Plan if monitoring results show a drawdown of 5 feet or more from the Project site; and modified MM VEG-10 would require a Desert Dry Wash Woodland Monitoring and Reporting Plan if monitoring results show a drawdown of one foot or more one mile from the Project site. These modifications account for significant reductions in the Project's expected water use and current understandings and projections of CVGB water levels, while still ensuring that Project-related groundwater impacts are properly mitigated.

# Riverside County Board of Supervisors Request to Speak

Submit request to Clerk of Board (right of podium), Speakers are entitled to three (3) minutes, subject to Board Rules listed on the reverse side of this form.

SPEAKER'S NAME: Ms MM ✓

Address: P.O Box 1341

City: Elsinore zip: 92531

Phone #: \_\_\_\_\_

Date: Feb, 25, 2020 Agenda # 3.16

### PLEASE STATE YOUR POSITION BELOW:

Position on "Regular" (non-appealed) Agenda Item:

Support  Oppose  Neutral

Note: If you are here for an agenda item that is filed for "Appeal", please state separately your position on the appeal below:

Support  Oppose  Neutral

I give my 3 minutes to: \_\_\_\_\_

# BOARD RULES

## **Requests to Address Board on "Agenda" Items:**

You may request to be heard on a published agenda item. Requests to be heard must be submitted to the Clerk of the Board before the scheduled meeting time.

## **Requests to Address Board on items that are "NOT" on the Agenda/Public Comment:**

Notwithstanding any other provisions of these rules, a member of the public shall have the right to address the Board during the mid-morning "Oral Communications" segment of the published agenda. Said purpose for address must pertain to issues which are under the direct jurisdiction of the Board of Supervisors. YOUR TIME WILL BE LIMITED TO THREE (3) MINUTES. Donated time is not permitted during Public Comment.

## **Power Point Presentations/Printed Material:**

Speakers who intend to conduct a formalized Power Point presentation or provide printed material must notify the Clerk of the Board's Office by 12 noon on the Monday preceding the Tuesday Board meeting, insuring that the Clerk's Office has sufficient copies of all printed materials and at least one (1) copy of the Power Point CD. Copies of printed material given to the Clerk (by Monday noon deadline) will be provided to each Supervisor. If you have the need to use the overhead "Elmo" projector at the Board meeting, please ensure your material is clear and with proper contrast, notifying the Clerk well ahead of the meeting, of your intent to use the Elmo.

## **Individual Speaker Limits:**

**Individual speakers are limited to a maximum of three (3) minutes.** Please step up to the podium when the Chairman calls your name and begin speaking immediately. Pull the microphone to your mouth so that the Board, audience, and audio recording system hear you clearly. Once you start speaking, the "green" podium light will light. The "yellow" light will come on when you have one (1) minute remaining. When you have 30 seconds remaining, the "yellow" light will begin to flash, indicating you must quickly wrap up your comments. Your time is up when the "red" light flashes. The Chairman adheres to a strict three (3) minutes per speaker. ***Note: If you intend to give your time to a "Group/Organized Presentation", please state so clearly at the very bottom of the reverse side of this form.***

## **Group/Organized Presentations:**

Group/organized presentations with more than one (1) speaker will be limited to nine (9) minutes at the Chairman's discretion. The organizer of the presentation will automatically receive the first three (3) minutes, with the remaining six (6) minutes relinquished by other speakers, as requested by them on a completed "Request to Speak" form, and clearly indicated at the bottom of the form.

## **Addressing the Board & Acknowledgement by Chairman:**

The Chairman will determine what order the speakers will address the Board, and will call on all speakers in pairs. The first speaker should immediately step to the podium and begin addressing the Board. The second speaker should take up a position in one of the chamber aisles in order to quickly step up to the podium after the preceding speaker. This is to afford an efficient and timely Board meeting, giving all attendees the opportunity to make their case. Speakers are prohibited from making personal attacks, and/or using coarse, crude, profane or vulgar language while speaking to the Board members, staff, the general public and/or meeting participants. Such behavior, at the discretion of the Board Chairman, may result in removal from the Board Chambers by Sheriff Deputies.