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STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Petition For Amendment for the **PALEN SOLAR ELECTRIC GENERATING SYSTEM**	**DOCKET NO: 09-AFC-7C** **PALEN SOLAR HOLDINGS, LLC AND CEC STAFF STIPULATION REGARDING CERTAIN CONDITIONS OF CERTIFICATION PART 2**

California Energy Commission (CEC) Staff and Palen Solar Holdings, LLC (PSH) hereby stipulate to an agreement that the Committee should incorporate the following Conditions of Certification into the Amended Final Decision for the Palen Solar Electric Generating System (PSEGS). The Conditions of Certification that are the subject of this Stipulation include:

- Traffic and Transportation
- Worker Safety and Fire Protection
- Biological Resources

Staff and PSH are also providing attachments to Conditions of Certification that were not provided in the earlier stipulation, Palen Solar Holdings/California Energy Commission Stipulation Regarding Certain Conditions of Certification – Part 1 (TN

201181). Attachments to Conditions of Certification that are included in this Stipulation include:

- Hazardous Materials – HAZ-6, Attachments A, B, and C
- Noise – NOISE-2, Exhibit 1 Noise Complaint Resolution Form
- Soil & Water Resources – SOIL&WATER-6, Appendix B, C, and D
- Compliance – COM-6, Key Event List; COM-11, Attachment 1 Complaint Report/Resolution Form

Pursuant to direction of the Committee at the evidentiary hearing on October 29, 2013, PSH and Staff have prepared the attached Stipulated Conditions of Certification showing all agreements and noting those Conditions of Certification which are disputed. There are no disputes between Staff and PSH regarding Traffic and Transportation. The sole Worker Safety and Fire Protection dispute between Staff and PSH relates to the amounts contained in Condition of Certification **WORKER SAFETY-7**

At October 29, 2013 evidentiary hearing during the Biological Resources testimony, PSH offered into evidence Exhibit 1122, which included specific modifications to the Biological Resources Conditions of Certification. Staff testified that it agreed with most, but not all, of the proposed modifications and offered additional language suggestions that would be acceptable. In the course of preparing this Stipulation, Staff had proposed and PSH has agreed to additional modifications to provide clarity to the Conditions of Certification. PSH also withdraws its opposition to Staff's modifications to Condition of Certification **BIO-4.** The attached Biological Resources Conditions of Certification incorporate all of these changes and Staff and PSH agree that the only disputed Condition of Certification relates to the amount of indirect impacts to the Mojave Fringe Toed Lizard (MFTL) and commensurate mitigation identified in Tables 1 and 2 of Condition of Certification **BIO-29.**

For a complete record, Staff and PSH provide the following summary of these additional modifications which have been incorporated into the attached Biological Resources Conditions of Certification.

CONDITION OF CERTIFICATION BIO-8

In the course of preparing this stipulation, Staff requested and PSH agrees to the following minor modification to Section 3 of Condition of Certification **BIO-8.**

3. Minimize Traffic Impacts. Vehicular traffic during Project site mobilization, construction and operation shall be confined to existing routes of travel to and from the Project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit shall not exceed 25 miles per hour on paved or stabilized roads within the Project site, on access roads for linear facilities, or on other roads used by project vehicles. However, this restriction is superseded by speed limits posted by county or state roadway agencies. In these cases, project vehicles shall abide by posted speed limits. No vehicle speed shall exceed 15 miles per hour on roads within areas where Mojave fringe toed lizard are known to occur or have the potential to occur on site. If the CPM determines that excessive road mortality is occurring, then additional measures **shall** ~~may~~ be implemented by the project owner in coordination with the Designated Biologist to reduce mortality which may include: installation of speed bumps in areas of high mortality, reduced speed limits in problematic areas, greater biological monitor presence, and enforcement actions against drivers who violate speed limits. Additional speed limit signs shall be posted within areas where Mojave fringe toed lizard are known to occur or have the potential to occur on site.

CONDITION OF CERTIFICATION BIO-16a

At the October 29, 2013 evidentiary hearing for Biological Resources, PSH and Staff witnesses discussed a proposed modification to Section 2.a. and the Verification of Condition of Certification **BIO-16a**, that was proposed by PSH in Exhibit 1122. Staff agreed to the language but wanted clarification to specifically address that if Staff were to manage the mitigation funds, it would not be required to submit a report to the CPM as Staff would then be reporting to itself. To address this concern Staff and PSH have agreed to the following modification to Section 2.a. of the Condition of Certification and to Item 2 of the Verification.

a. Pay $1,500,000.00 to fund the activities of a CPM-approved third party or CEC that will perform additional migratory bird conservation measures. Funds would be dispersed only with the release and approval of the CPM. **The third party shall prepare and submit an annual report to the CPM and the project owner that provides an accounting of the funds spent, the activities performed, and the results of any studies, surveys, analysis, etc. performed with the funds. If the funds are managed by the CEC, the CEC shall prepare a report and submit it to the project owner and shall post to its website, that provides an accounting of the funds spent, the activities performed, and the results of any studies, surveys, analysis, etc. performed with the funds.**

Verification:

2. Either the CEC or the CPM-approved third party shall prepare an annual report detailing a full accounting of the funds spent, the funds remaining in the account, the amount of interest earned, the recipient of any funds spent, the specific activities performed, and the results of any studies, surveys, analysis, etc. performed with the funds. **If the funds are managed by the CPM-approved third party, the third party shall provide the report to the CPM and the project owner. If the funds are managed by the CEC, the report shall be provided to the project owner and posted to the CEC website.**

CONDITION OF CERTIFICATION BIO-16b

At the October 29, 2013 evidentiary hearing for Biological Resources, PSH and Staff witnesses discussed additional modifications to Sections 2, and 7.(a) of Condition of Certification **BIO-16b**, that were proposed by PSH in Exhibit 1122. In its oral testimony Staff agreed to the language but wanted clarification to specifically address that the project owner would not have voting rights on the Technical Advisory Committee (TAC) and to address the project owner's commitment to pay for rehabilitation of wildlife found injured on site.

Additionally, while working on this stipulation, Staff proposed and PSH agreed that minor modifications to should be made to: Section 2 to clarify the authority of the CPM to require additional third party monitoring; Section 5 to include the submittal of raw data related to monitoring; Section 6 to add the word “responsible”; and the Verification to conform the language to allow the Eagle Protection Plan (EPP) to be submitted as a stand-alone document. To address these concerns Staff and PSH have agreed to the following modification to Sections 2, 5, 6, 7. (a), and the Verification of the Condition of Certification

2. Formation of a technical advisory committee (TAC). The TAC will consist of a single representative of the BLM, CEC, CDFW, USFWS, one representative of the Project Owner involved in operation of the project and one representative of the Project Owner with environmental compliance responsibilities. **The representatives of the Project Owner will not have voting rights on the TAC.** The TAC will facilitate concurrent project owner, CPM, and state and federal wildlife agency review of seasonal and annual survey results development of a decision-framework for evaluating, the effectiveness of the adaptive management measures implemented by the project owner, modification of the surveys in response to the results, if necessary, and the identification of additional mitigation responses that are commensurate with the extent of impacts that may be identified in the monitoring studies. A meeting schedule for the TAC will be identified, for regular review of avian and bat injury and mortality monitoring results, and recommend to the CPM for approval any necessary changes to monitoring, adaptive management, and appropriate dissemination of mitigation funds per BIO-16a #2. The TAC will also assist the CPM in implementing the following provisions #3 - #8 and **the CPM** will have the authority to require independent, third-party monitoring, if it determines that the project owner is not monitoring consistent with the approved BBCS and the project owner fails to timely cure such inconsistency after reasonable advance notice from the **CPM**~~TAC~~.

5. Avian and bat mortality and injury monitoring: An avian and bat injury and mortality monitoring program shall be implemented during construction and operation of the project. The results of

avian monitoring data shall be reported directly to the CPM and the project owner**, as well as all raw data and field notes**.

6. Survey schedule and period. All surveys and monitoring studies included in the BBCS shall be conducted for at least three years following commercial operation and approval of the BBCS by the CPM. At the end of the three-year period, the project owner, the TAC and the CPM shall meet and confer to determine whether the survey program shall be continued for subsequent periods. The monitoring program may be modified with the approval of the CPM in response to survey results, identified scavenging efficiency rates, or other factors to increase monitoring accuracy and reliability or in accordance with the adaptive management decision-making framework included in the BBCS. The individuals conducting the surveys and monitoring shall be available to the CPM or Energy Commission biological resources staff to answer questions on monitoring status, survey methods or the results of monitoring studies, and shall not be precluded from sharing their full and complete knowledge of the monitoring program, incidental observations, and results with the CPM or **responsible** Energy Commission staff.

7. (a) Reasonable measures for characterizing the extent and significance of detected mortality and injuries clearly attributable to the project and ensuring adequate funding for wildlife rehabilitation activities necessary for injuries clearly attributed to the project **or wildlife found on site** and approved by the CPM, in conjunction with the USFWS and CDFW. The Designated Biologist or Biological Monitors shall identify and photograph the injured or dead birds or bats in-situ, as well as a full-frame dorsal, ventral and head view using a camera with an automatic GPS and time/date stamp. The record(s) will be provided to the CPM in the monthly compliance report during construction and operation.

Verification: The BBCS **(and EPP if submitted under separate cover)** shall be submitted to the CPM for review and approval and to CDFW, BLM, and USFWS for review and comment no less than 60 days after start of construction.

The undersigned hereby stipulate that the following attached Conditions of Certification reflect the agreements between PSH and Staff.

Dated: November 15, 2013

_____
Scott A. Galati
Counsel to Palen Solar Holdings, LLC

s/ Jennifer Martin-Gallardo
Jennifer Martin-Gallardo
CEC Staff Counsel

PROPOSED CONDITIONS OF CERTIFICATION

TRANS-1 Prior to the start of construction of the PSEGS, the project owner shall prepare and implement a Traffic Control Plan (TCP) for the PSEGS's construction and operations traffic. The TCP shall address the movement of workers, vehicles, and materials, including arrival and departure schedules and designated workforce and delivery routes.

The project owner shall consult with the County of Riverside and the California Department of Transportation (Caltrans) District 8 office in the preparation and implementation of the Traffic Control Plan (TCP). The project owner shall submit the proposed TCP to the County of Riverside and the Caltrans District 8 office in sufficient time for review and comment, and to the Energy Commission Compliance Project Manager (CPM) for review and approval prior to the proposed start of construction and implementation of the plan. The project owner shall provide a copy of any written comments from the County of Riverside and the Caltrans District 8 office and any changes to the TCP to the CPM prior to the proposed start of construction.

The Traffic Control Plan (TCP) shall include:

- A work schedule designed to ensure that stacking does not occur at intersections necessary to enter and exit the project site. The project owner shall consider using one or more of the following measures designed to prevent stacking: staggered work shifts, off-peak work schedules, and/or restricting travel to and departures from each project site to 10 or fewer vehicles every three minutes. The submitted work schedule shall include a detailed plan for worker arrival and departure, including number of workers that are planned to arrive and depart at each time, and methods for ensuring worker compliance.
- A plan for monthly monitoring of traffic volume and/or delay at study roadways and intersections during periods of higher construction employment (Months 19 through 25, including Month 22, the peak construction month).
- Provisions for an incentive program, such as employer-sponsored commuter checks, to encourage construction workers to carpool and/or use van or bus service.
- Limitation of truck deliveries at the project site to only off-peak construction commute hours and/or staggering of truck deliveries throughout the day.

- A heavy-haul plan addressing the transport and delivery of heavy and oversized loads requiring permits from the California Department of Transportation (Caltrans) or other state or federal agencies.
- Timing of heavy equipment and building material delivery to the sites
- Parking for workforce and construction vehicles.
- Emergency vehicle access to the project site.
- Provisions for redirection of construction traffic with a flag person as necessary to ensure traffic safety and minimize interruptions to non-construction related traffic flow.
- Placement of signage, lighting, and traffic control devices at the project construction site and laydown areas.
- Placement of signage along northbound Corn Springs Road and at the entrance of each of the I-10 westbound and eastbound off-ramps at Corn Springs Road notifying drivers of construction traffic throughout the duration of the construction period.
- Placement of signage to redirect traffic from Corn Springs Road during construction activities related to roadway realignments and pipeline installation in and across the Corn Springs Road right-of-way.
- Temporary closing of travel lanes, if necessary. When/if lane closures are required on the State Highway System during construction, refer to Section 517 of Caltrans' Encroachment Permits Manual for the proper procedures to manage traffic during construction. The manual can be accessed online at:

  http://www.dot.ca.gov/hq/traffops/developserv/permits/
- Access to adjacent residential and commercial property during the construction of all linears.

Verification: At least 60 calendar days prior to the start of construction, including any grading or site remediation on the power plant site or its associated easements, the project owner shall submit the proposed TCP to the County of Riverside and the Caltrans District 8 office for review and comment and to the CPM for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to the County of Riverside and the Caltrans District 8 office requesting review and comment.

At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from either the County of Riverside and the Caltrans District 8 office, along with any changes to the proposed Traffic Control Plan, to the CPM for review and approval.

In the MCRs during Months 19 through 25, submit the monitoring results for the study intersections.

TRANS-2 The project owner shall comply with limitations imposed by Caltrans District 8 and other relevant jurisdictions, including the County of Riverside, on vehicle sizes and weights and driver licensing. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.

Verification: In the Monthly Compliance Reports (MCRs), the project owner shall report permits received during that reporting period. In addition, the project owner shall retain copies of permits and supporting documentation on-site for Compliance Project Manager (CPM) inspection if requested.

TRANS-3 The project owner shall coordinate with Riverside County to conduct pavement testing for that portion of Corn Springs Road that could be utilized by PSEGS construction activities. Based on results of the pavement testing and prior to the first heavy haul delivery, the project owner shall make any necessary improvements to ensure that portion of Corn Springs Road that will be utilized for heavy haul construction activities will provide sufficient load-bearing capacity for heavy haul construction activities. Improvements must meet the minimum Riverside County or Caltrans standard (whichever is applicable) for a roadway that accommodates heavy trucks.

Following construction, the project owner shall ensure that any roads damaged due to project-related construction activities are restored to original or near-original condition, as directed by the CPM and in coordination with Caltrans and/or Riverside County. Repair and restoration of access roads may be required at any time during the construction phase of the project to assure public safety. Repairs required during construction shall be made as soon as practical.

Verification: Prior to heavy haul activities, the project owner shall provide a copy of the pavement test to the CPM and Riverside County for review. Sixty (60) days prior to start of construction, the project owner shall establish a schedule for approval and completion of any roadway improvements.

At least 30 days prior to the start of site mobilization, the project owner shall consult with the County of Riverside and Caltrans District 8 and notify them of the proposed schedule for project construction. The purpose of this notification is to request that the County of Riverside and Caltrans consider postponement of public right-of-way repair or improvement activities in areas affected by project construction until construction is completed, and to coordinate with the project owner regarding any concurrent construction-related activities that are planned or in progress and cannot be postponed.

During construction, the project owner shall report in the MCRs any project-related damage requiring restoration and the status of that restoration. The MCRs shall be forwarded to Riverside County for review and comment on these activities.

Within 60 calendar days after completion of construction, the project owner shall meet with the CPM, the County of Riverside, and Caltrans District 8 to identify sections of public right-of-way to be repaired. At that time, the project owner shall establish a schedule to complete the repairs and to receive approval for the action(s). Following completion of any public right-of-way repairs, the project owner shall provide to the CPM letters signed by the County of Riverside and Caltrans District 8 stating their satisfaction with the repairs.

TRANS-4 The project owner or contractor shall comply with Caltrans' and other relevant jurisdictions' limitations for encroachment into public rights-of-way and shall obtain necessary encroachment permits from Caltrans and any other relevant jurisdictions. Design and construction for the project access road connection to the Corn Springs Road Interchange shall follow the guidelines in Caltrans Highway Design Manual Section 504.8 – Access Control:

http://www.dot.ca.gov/hq/oppd/hdm/hdmtoc.htm.

Verification: In the MCRs, the project owner shall report permits received during that reporting period. In addition, for at least six months after the start of commercial operation, the project owner shall retain copies of permits and supporting documentation on-site for CPM inspection if requested.

TRANS-5 Federal Aviation Administration Notification of Construction Equipment

The project owner shall file a Form 7460-1 with the Federal Aviation Administration (FAA) regarding the use of any construction equipment exceeding 760 feet in height.

Verification: At least 90 days prior to ground disturbance, the project owner shall submit a copy of the FAA Determination of No Hazard to Navigable Airspace regarding the construction equipment to the CPM.

TRANS-6 Obstruction Marking and Lighting

The project owner shall install obstruction marking and lighting on the two solar power towers. Marking and lighting for the towers shall be consistent with requirements provided in the FAA's "Determination of No Hazard" for the towers, and as expressed in the following documents:

- FAA Advisory Circular 70/7460-1K, Change 2, Obstruction Marking and Lighting, a med-dual system - Chapters 4,8(M-Dual), &12
- FAA Safety Alert for Operators (SAFO) 09007.

Evening lighting shall use the longest permissible interval between flashes and the shortest flash duration permissible. (See the Biological Resources section for more information.)

Temporary lighting must be installed once a tower reaches 200 feet in height during construction. Permanent lighting consistent with all requirements shall be installed and activated within 5 days of completion of construction and prior to the start of plant operation. Within 5 days after the towers reach their greatest height, an FAA Form 7460-2 "Notice of Actual Construction or Alteration" shall be submitted to the FAA.

Lighting shall be operational 24 hours a day, 7 days a week for the life of project operation. Upgrades to the required lighting configurations, types, location, or duration shall be implemented consistent with any changes to FAA obstruction marking and lighting requirements.

The FAA has proposed publishing guidance on the use of Audio Visual Warning Systems (AVWS) for obstruction lighting. The project owner has the future option to change the tower obstruction lighting system to an Audio Visual Warning System. An AVWS was recommended by the National Park Service in a comment on the FAA Notice of Construction or Alteration for the PSEGS to preserve the natural darkness in this portion of the Mojave Desert. If it is feasible and the project owner wishes to implement an AVWS in the future, the project owner shall consult with the FAA and the CPM as necessary.

Verification: At least 60 days prior to the start of construction, the project owner shall submit to the CPM for approval final design plans for the two solar power towers that depict the required air traffic obstruction marking and lighting, including the temporary lighting.

Within 1 day of the tower heights reaching 200 feet in height, the project owner shall install temporary lighting consistent with FAA requirements and shall inform the CPM in writing (including a photo of the lighting) within 10 days of installation.

Within 5 days of completion of solar power tower construction and prior to the start of plant operation, the project owner shall install and activate permanent obstruction marking and lighting consistent with FAA requirements and shall inform the CPM in writing within 10 days of installation and activation. The project owner shall also provide to the CPM a copy of Form 7460-2 provided to the FAA. The CPM (or designated inspector) shall conduct an inspection after activation to ensure the lighting is operable and has been installed with federal installation and manufacturing standards as established by the FAA under FAA Advisory Circulars.

TRANS-7 Heliostat Positioning and Monitoring Plan

To reduce glint and glare from the project, the project owner shall prepare a Heliostat Positioning and Monitoring Plan (HPMP) which includes the following information. The HPMP shall be implemented during installation of the heliostats and during project operation.

1. Identify the heliostat movements and positions (including during normal operations, daytime mirror-washing, removal of solar flux due to high winds, and all non-normal known operational scenarios and possible malfunctions) that could result in potential exposure of observers at various locations, including pilots, motorists, pedestrians and hikers in nearby wilderness areas and the Riverside County PSEC Project Tower, to direct solar reflections from the heliostats (DSRH).

2. Describe within the HPMP how programmed heliostat operation would address potential human health and safety hazards from DSRH (DSRY Events) at locations of observers, and how it would maximally limit or avoid potential exposures. This shall include heliostat positioning and transition algorithm exclusion zones that maximally avoid ground-based DSRH events.

3. Describe how the mirrored surfaces of the heliostats would either be covered or oriented to minimize DSRH Events on I-10 an at the Riverside County PSEC Project Tower during construction until calibration activities whereby the heliostats are properly seated, oriented, and under computer control to avoid exclusion zones.

4. Implement a set of baseline heliostat positioning and control algorithms to minimize DSRH Events as soon as realistically possible after heliostat installation. The baseline control algorithms shall initially minimize ground-based DSRH Events during site set-up, testing and calibration prior to power generation operations. If this does not work to minimize ground-based DSRH Events on I-10, the project owner shall modify the perimeter fencing along I-10 to minimize motorists from experiencing DSRH Events on I-10.

5. Prepare a monitoring plan to quantify the frequency and locations of DSRH Events and validate that the DSRH Events are minimized by HPMP implementation. This may be implemented with a staring camera system along a known line of sight to ground-based observation points (e.g., I-10).

   The monitoring plan shall be made available to interested parties, including the Department of Defense (DoD), California Department of Transportation (Caltrans), California Highway Patrol (CHP), Federal Aviation Administration (FAA), Riverside County Economic Development Agency Department of Aviation, the Riverside County ALUC, and the Riverside County Transportation and Land Management

Agency . The monitoring plan shall be updated on an annual basis for the first 5 years and at 2-year intervals thereafter for the life of the project.

6. Obtain field measurements in candela per meters squared and watts per meter squared to validate that the HPMP avoids the potential for human health and safety hazards consistent with the methodologies detailed in the 2010 Sandia Lab document presented by Clifford Ho, et al., including those studies and materials related to ocular damage referenced within.

7. Provide requirements and procedures to document, investigate and resolve legitimate complaints regarding glint and glare events. This includes establishing a toll-free number for the public to report complaints related to glint and glare and posting this number in the same location as that required in Condition of Certification COMPLIANCE-9.

8. The HPMP shall include a communication protocol for Riverside County with specific contact information whereby Riverside County can speak to a representative at the PSEGS site 24 hours a day/seven days a week to respond to requests from the Riverside County PSEC Project to investigate potential interference with operation of the PSEC microwave tower.

   The project owner shall notify the CPM within 3 days of receiving a glint or glare complaint. As soon as the complaint has been resolved or within 10 days of the complaint, the project owner shall submit to the CPM a report in which the complaint(s) as well as the actions taken to resolve the complaint are documented. The report shall include (a) a complaint summary, including the name and address of the complainant; (b) a discussion of the steps taken to investigate the complaint; (c) the reasons supporting a determination of whether or not the complaint is legitimate; and (d) the steps taken to address the complaint and the final results of these efforts. This information shall be included in the Monthly Compliance Reports.

Verification: 60 days prior to the start of construction, the project owner shall prepare and submit to the CPM for review and approval a plan for baseline heliostat positioning and control algorithms to minimize DSRH events after heliostat installation and during site set-up, testing, and calibration. 90 days prior to the start of operation of any unit, the project owner shall submit the remainder of the HPMP describing how the above measures will be implemented to reduce glint and glare during project operation, and how monitoring will occur.

If the project owner receives a complaint regarding glint or glare, the owner shall conduct an investigation to determine whether the complaint is legitimate and if the project is the source of such glint or glare. If it is determined that the complaint is legitimate and the project is the source of such glint or glare, the project owner shall take all feasible measures to eliminate or reduce the glint or glare. Such measures may include localized screening.

The project owner shall notify the CPM within 3 days of receiving a glint or glare complaint. As soon as the complaint has been resolved or within 10 days of the complaint, the project owner shall submit to the CPM a report in which the complaint(s) as well as the actions taken to resolve the complaint are documented. The report shall include (a) a complaint summary, including the name and address of the complainant; (b) a discussion of the steps taken to investigate the complaint; (c) the reasons supporting a determination of whether or not the complaint is legitimate; and (d) the steps taken to address the complaint and the final results of these efforts. This information shall be included in the Monthly Compliance Reports.

If no legitimate complaints are received and/or if a legitimate complaint is received and the project owner has resolved the source of the complaint(s) within the first 12 months of project operation, project owner can request that the CPM release the project owner from the obligations under Sections 5 and 6 of this condition after the 12^{th} month of project operations.

TRANS-8 Power Tower Luminance Monitoring Plan

The project owner shall prepare a Power Tower Luminance Monitoring Plan for: providing procedures for conducting periodic monitoring of power tower luminance; and for documenting, investigating, and resolving complaints regarding visual distraction or discomfort glare effects from the power towers experienced by pilots, motorists, and pedestrians.

The Power Tower Luminance Monitoring Plan shall include provisions for the following:

1. Measurement of luminance using an appropriate photometer or similar device and reporting of data in photometric units. The measurements are intended to:

   a) develop a baseline of tower luminance measurements to verify that the luminance values are not in excess of 10^6 cd/m^2 and to support anticipation and investigation of any future visual distraction or discomfort glare events, and to

   b) provide quantitative measures of luminance that can be associated with any observed and reported visual distraction or discomfort glare events/ effects from the power tower receivers;

2. Coordination of luminance evaluations with the FAA, Department of Defense (DoD), Caltrans, California Highway Patrol, Riverside County Economic Development Agency Department of Aviation, Riverside County Transportation and Land Management Agency, and the Riverside County Airport Land Use Commission (ALUC) in relation to the Desert Center and Blythe Airports and I-10. Within 30 days after completing luminance measurements required under this plan, the project owner shall submit a summary report to these agencies for review and comment, and to the CPM for review and approval.

3. Measurement of luminance at locations where any visual distraction or discomfort glare effects have been reported or at a representative site location where accurate measurements of luminance can be made that would be representative of conditions prompting the complaint;

4. Identification and implementation of appropriate mitigation measures if reported visual distraction or discomfort glare events are determined to be legitimate and/ or if power tower luminance is determined to be causing a safety concern. The project owner shall consider and propose any reasonable mitigation measures that are technically and financially feasible. The mitigation measures may include: surface treatment; material or structural changes to increase absorption and reduce reflectivity of the power tower receivers; reduction of the number of heliostats incident on the towers; road signage; screening; or other reasonable measures to either reduce luminance or mitigate the safety concern.

5. Post-mitigation verification. Within 30 days following the implementation of mitigation measures designed to reduce reflectivity of the power towers or mitigate the safety concern, the project owner shall repeat the luminance measurements to demonstrate the effectiveness of mitigation measures and prepare a supplemental survey report for review and comment by the FAA, Caltrans, California Highway Patrol, Riverside County Economic Development Agency Department of Aviation, and the Riverside County ALUC for review and comment, and to the CPM for review and approval.

Verification: At least 90 days prior to commercial operation of the first PSEGS power plant, the project owner shall provide a Power Tower Luminance Monitoring Plan as described above for review and approval by the CPM. The plan shall require the project owner to report any complaint to the CPM within 10 days of receiving the complaint.

Under the following circumstances, the project owner shall submit to the CPM an evaluation of the effects of the intensity of the luminance of light reflected from the power tower receivers:

A. Within 30 days following commercial operation of each unit;

B. Within 90 days following commercial operation of each unit;

C. After the first 5 years of operation;

D. If a major design change is implemented that results in an increase in the reflective luminance of either power tower; or

E. After receiving a legitimate complaint regarding visual distraction or discomfort glare associated with the power towers.

TRANS-9 The project owner shall ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of hazardous materials

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Verification: In the MCRs, the project owner shall report permits and/or licenses for hazardous substance transportation received during that reporting period. In addition, the project owner shall retain copies of permits, licenses, and supporting documentation on-site for CPM inspection if requested.

PROPOSED CONDITIONS OF CERTIFICATION

WORKER SAFETY-1 The project owner shall submit to the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program that complies with all applicable federal and state LORS for Worker Safety and Health and includes the following:

- a Construction Personal Protective Equipment Program (including compliance with ANSI Standard Z87.1-2010 for protective eye wear);
- a Construction Exposure Monitoring Program;
- a Construction Injury and Illness Prevention Program, including measures to prevent exposure to Valley Fever;
- a Construction heat stress protection plan that implements and expands on existing Cal-OSHA regulations as found in 8 CCR 3395;
- a Construction Emergency Action Plan (including an Emergency Medical Evacuation Plan for the period of construction);
- a Construction Flood Safety Plan; and
- a Construction Fire Prevention Plan that includes the concrete batch plant and the above-ground fuel depot.

The Personal Protective Equipment Program, the Exposure Monitoring Program, the Heat Stress Protection Plan, and the Injury and Illness Prevention Program shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable safety orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the Riverside County Fire Department (RCFD) for review and comment prior to submittal to the CPM for approval.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction Safety and Health Program. The project owner shall provide a copy of a letter to the CPM from the Riverside County Fire Department stating the fire department's comments on the Construction Fire Prevention Plan and Emergency Action Plan.

WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program that complies with all applicable federal and state LORS related to Worker Safety and Health and include the following:

- an Operation Injury and Illness Prevention Plan, including measures to prevent exposure to Valley Fever;

- an Operation heat stress protection plan that implements and expands on existing Cal OSHA regulations (8 CCR 3395);
- an Emergency Action Plan (including an Emergency Medical Evacuation Plan for operations);
- Hazardous Materials Management Program;
- Fire Prevention Plan that includes the fuel depot should the project owner elect to maintain and operate the fuel depot during operations (8 Cal Code Regs. § 3221) as well as the fire protection measures described in this Decision and any necessary upgrades required by current applicable LORS;
- An Operations Flood Safety Plan; and
- Personal Protective Equipment Program (8 Cal Code Regs, §§ 3401-3411) that also includes compliance with ANSI Standard Z87.1-2010 for protective eye wear.

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, Heat Stress Protection Plan, and Personal Protective Equipment Program shall be submitted to the CPM for review and comment concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the Riverside County Fire Department for review and comment.

Verification: At least 30 days prior to the start of first-fire or commissioning, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program. The project owner shall provide a copy of a letter to the CPM from the Riverside County Fire Department stating the fire department's comments on the Operations Fire Prevention Plan and Emergency Action Plan.

WORKER SAFETY-3 The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of power plant construction activities and relevant laws, ordinances, regulations, and standards; is capable of identifying workplace hazards relating to the construction activities; and has authority to take appropriate action to assure compliance and mitigate hazards. The CSS shall:

- have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;
- assure that all construction and commissioning workers and supervisors receive adequate safety training;

- complete accident and safety-related incident investigations and emergency response reports for injuries and inform the CPM of safety-related incidents; and
- assure that all the plans identified in Conditions of Certification **WORKER SAFETY-1** and **-2** are implemented.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the Construction Safety Supervisor (CSS). The contact information of any replacement CSS shall be submitted to the CPM within one business day.

The CSS shall submit in the Monthly Compliance Report a monthly safety inspection report to include:

A. A record of all employees trained for that month (all records shall be kept on-site for the duration of the project);

B. A summary report of safety management actions and safety-related incidents that occurred during the month;

C. A report of any continuing or unresolved situations and incidents that may pose danger to life or health; and

D. A report of accidents and injuries that occurred during the month.

WORKER SAFETY-4 The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO and will be responsible for verifying that the Construction Safety Supervisor, as required in Condition of Certification **WORKER SAFETY-3**, implements all appropriate Cal/OSHA and Energy Commission safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

Verification: At least 30 days prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.

WORKER SAFETY-5 The project owner shall ensure that portable automatic external defibrillators (AEDs) and Trauma/First-Aid kits sufficient to handle anticipated industrial accidents are ~~is~~ located on-site during construction and operations and shall implement a program to ensure that workers are properly trained in AED use and basic first aid (which includes CPR) and that the equipment is properly maintained and functioning at all times. During construction and commissioning, the following persons shall be trained in ~~its~~ AED use and

basic first aid (which includes CPR) and at least one of the following supervisors shall be on-site whenever the workers that they supervise are on-site: the Construction Project Manager or delegate, the Construction Safety Supervisor or delegate, and shift foremen. During operations, all power plant employees shall be trained in AED use and basic first aid (which includes CPR). A plan for locating AEDs and first aid kits and the training program shall be submitted to the CPM for review and approval.

Verification: Within 14 days after the start of site mobilization, the project owner shall submit to the CPM proof that portable automatic external defibrillators (AEDs) and trauma/first aid kits exist on-site. At least 60 days prior to the start of site mobilization, the project owner shall provide a plan for locating AEDs and first aid kits and a copy of the training and maintenance program for review and approval.

WORKER SAFETY-6 The project owner shall:

A. Provide not less than two (2) secondary site access gates for emergency personnel to enter the site, one on the north site of the site and the other on the south side of the site. These secondary site access gates shall be located at least one-half mile from the main gate and shall be equipped with locks that can be opened by emergency response personnel including the Riverside County Fire Department, the Riverside County Sheriff's Department, and the California Highway Patrol.

B. In lieu of providing a second access road which provides entry to the site, the project owner shall share the financial responsibility for the costs of obtaining and maintaining two all-terrain fire engines for the Riverside County Fire Department and shall initially pay to the Genesis Solar Energy Project owner an amount equally to 50 percent of the costs of the engines plus annually 50 percent of the annual maintenance.

C. Maintain the main access road and provide a plan for construction and implementation, and ensure that the main access road and all internal site roads (paved or dirt) are capable of supporting fire engine with a weight of 60,000 pounds.

Plans for the secondary access gates, the method of gate operation, and maintenance of the roads shall be submitted to the Riverside County Fire Department for review and comment and to the CPM for review and approval.

Verification: At least 60 days prior to the start of site mobilization, the project owner shall submit to the RCFD and the CPM preliminary plans showing the locations of at least two (2) secondary site access gates to the site, a description of how the secondary site access gates will be opened by the fire department and other emergency services, and a description and map showing the location, dimensions, and composition of the main road.

At least 30 days prior to the start of site mobilization, the project owner shall submit the secondary site access gates final plans plus the road maintenance plan to the CPM for

review and approval. The final plan submittal shall also include a letter containing comments from the Riverside County Fire Department or a statement that no comments were received.

At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM proof of payment for one-half of the cost of the two all-terrain fire trucks to the Genesis Solar Energy Project owner. In the Project Owners Annual Report, the project owner shall provide proof that it has paid to the Genesis Solar Energy Project owner its share of the annual maintenance costs of the two all-terrain fire trucks.

WORKER SAFETY-7 ***DISPUTED***

WORKER SAFETY-8 The project owner shall develop and implement an enhanced Dust Control Plan that includes the requirements described in Conditions **AQ-SC3** and **AQ-SC4**, and additionally requires:

A. Site worker use of dust masks (NIOSH N-95 or better) whenever visible dust is present;

B. No downwind PM10 ambient concentrations to increase more than 50 micrograms per cubic meter above upwind concentrations as determined by simultaneous upwind and downwind sampling. High-volume particulate matter samplers or other EPA-approved equivalent method(s) for PM10 monitoring shall be used. Samplers shall be:

   a. Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate EPA-published documents for EPA-approved equivalent methods(s) for PM10 sampling;

   b. Reasonably placed upwind and downwind of the large operation based on prevailing wind direction and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized; and

   c. Operated during active operations.

C. Implementation of enhanced dust control methods (increased frequency of watering, use of dust suppression chemicals, etc. consistent with **AQ-SC4**) immediately whenever visible dust persists in the breathing zone of the workers, or when PM10 measurements obtained when implementing B (above) indicate an increase in PM10 concentrations due to project activities of 50 $\mu g/m^3$ or more.

Verification: At least 30 days prior to the commencement of site mobilization, the enhanced Dust Control Plan shall be provided to the CPM for review and approval.

WORKER SAFETY-9 The project owner shall participate in annual joint training exercises with the Riverside County Fire Department (RCFD). The project owner shall coordinate this training with other Energy Commission-licensed

solar power plants within Riverside County such that this project shall host the annual training on a rotating yearly basis with the other solar power plants.

Verification: At least 10 days prior to the start of commissioning, the project owner shall submit to the CPM proof that a joint training program with the RCFD is established. In each January Monthly Compliance Report during construction and the Annual Compliance Report during operation, the project owner shall include the date, list of participants, training protocol, and location of the annual joint training.

WORKER SAFETY-10 The project owner shall submit to the Riverside County Fire Department (RCFD) all plans and schematic diagrams that show the details of all fire detection and suppression systems and shall pay the RCFD its usual and customary fee for the review of those plans and for site inspections after construction but before operations begin. The project owner shall provide proof to the CPM that the plans have been submitted to the RCFD on a timely basis and a copy of the comments received from the RCFD after plan review and after site inspections.

Verification: In each Monthly Compliance Report during construction, the project owner shall include any and all comments received from the RCFD on fire detection and suppression systems and proof that the required plan review and inspection fees have been paid to the fire department.

During operation, the project owner shall provide proof in the Annual Compliance Report that the required inspection fees have been paid to the fire department.

WORKER SAFETY-11 The project owner shall prepare and implement a Tower Access and Safety Plan for the construction phase and one for operations (which includes commissioning). These plans shall include descriptions of the following:

1. The type of elevators (cage, enclosed, man-lift, etc.) and emergency hoist systems, their capacity in number of people and pounds, the dimensions of the elevator cage or enclosed structure, and a diagram of the emergency hoist systems.

2. The primary and secondary (emergency) power supply to the elevators hoist systems and how emergency backup power will be triggered.

3. The emergency elevator recall system (manual on-site activation, remote from the control room, wired or wireless).

4. The fire detection and suppression systems (fixed and portable) within the towers and in the room at the top of tower behind the boiler.

5. Any planned ventilation systems for inside the towers.

6. The maximum number of workers allowed in each tower at any one time, allowed in the room at the top of each of the towers during periods when

the tower will be exposed to solar flux, temperature sensors within the towers and the room at the top, and the expected durations and frequency of this need to have workers at the top of a tower.

7. The manner in which access to the towers and the tower elevators will be controlled, including how a Lockout/Tagout system will be implemented.

8. An Emergency Response Plan that includes a fire suppression plan to respond to emergencies in the tower, the type of PPE that would be available and required for workers both in a tower and those responding to an emergency in a tower to use in the event of a fire or smoke incidence, evacuation of workers, how the emergency hoist systems will be used, and evacuation or rescue of an injured worker from any level of the tower.

9. The project owner shall provide these plans to the CPM for review and approval.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the construction Tower Access and Safety Plan. The project owner shall also provide a copy of a letter to the CPM from the RCFD stating the RCFD's comments on the Construction Tower Access and Safety Plan or a letter stating that no comments were received from the RCFD within thirty (30) days of sending the plan to the RCFD.

At least 30 days prior to the start of commissioning (as defined by the CPM), the project owner shall submit to the CPM for review and approval a copy of the Operations Tower Access and Safety Plan. The project owner shall also provide a copy of a letter to the CPM from the RCFD stating the RCFD's comments on the Operations Tower Access and Safety Plan or a letter stating that no comments were received from the RCFD within thirty (30) days of sending the plan to the RCFD.

WORKER SAFETY-12 The project owner shall report to the CPM within 24 hours of any incidence of heat illness (heat stress, exhaustion, stroke, or prostration) occurring in any worker on-site and shall report to the CPM the incidence of any confirmed case of Valley Fever in any worker on the site within 24 hours of receipt of medical diagnosis.

Verification: The project owner shall provide reports of heat-related and Valley Fever incidences in any worker on the site via telephone call or e-mail to the CPM within 24 hours of a heat-related occurrence or confirmed diagnosis of a case of Valley Fever, and shall include such reports in the Monthly Compliance Report.

PROPOSED CONDITIONS OF CERTIFICATIONS

DESIGNATED BIOLOGIST SELECTION AND QUALIFICATIONS[1]

BIO-1 The Project owner shall assign at least one Designated Biologist to the Project. The Project owner shall submit the resume of the proposed Designated Biologist(s), with at least three references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval in consultation with CDFW and USFWS.

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;

2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;

3. Have at least one year of field experience with biological resources found in or near the Project area;

4. Meet the current USFWS Authorized Biologist qualifications criteria (www.fws.gov/ventura/speciesinfo/protocols_guidelines), demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the USFWS; and

5. Possess a California ESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, in consultation with CDFW and USFWS, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the Conditions of Certification.

Verification: At least 60 days prior to site mobilization or construction activities, the Project owner shall submit the resumes of the Designated Biologists(s) along with the completed USFWS Desert Tortoise Authorized Biologist Request Form (www.fws.gov/ventura/speciesinfo/protocols_guidelines) and submit it to the USFWS and the CPM for review and final approval.

[1] USFWS <www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt> designates biologists who are approved to handle tortoises as “Authorized Biologists.” Such biologists have demonstrated to the USFWS that they possess sufficient desert tortoise knowledge and experience to handle and move tortoises appropriately, and have received USFWS approval. Authorized Biologists are permitted to then approve specific monitors to handle tortoises, at their discretion. The California Department of Fish and Wildlife (CDFW) must also approve such biologists, potentially including individual approvals for monitors approved by the Authorized Biologist. Designated Biologists are the equivalent of Authorized Biologists**.** Only Designated Biologists and certain Biological Monitors who have been approved by the Designated Biologist would be allowed to handle desert tortoises

No site mobilization or construction-related ground disturbance , shall commence until an approved Designated Biologist is available to be on site.

If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least 10 working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the Project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.

DESIGNATED BIOLOGIST DUTIES

BIO-2 The Project owner shall ensure that the Designated Biologist performs the activities described below during any site mobilization and construction commissioning, operation, non-operation or closure, or other activities that may impact biological resources. The Designated Biologist may be assisted by the approved Biological Monitor(s) but remains the contact for the Project owner and the CPM. The Designated Biologist Duties shall include the following:

1. Advise the Project owner's Construction and Operation Managers and the CPM on the implementation of the biological resources conditions of certification;

2. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to be submitted by the Project owner;

3. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special-status species or their habitat;

4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;

5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm’s way;

6. Notify the Project owner and the CPM of any non-compliance with any biological resources condition of certification, and notify the CPM within one working day of injury or mortality of a special status species, or if more than six injured or dead birds or bats are located onsite at one time;

7. Collect all data necessary to document the events set forth in paragraph 6 above, including GPS location, photographs, and observations necessary to develop a comprehensive report, in accordance with USFWS and

CDFW permits or directions with respect to handling, transport, or storage of avian or bat species;

8. Respond directly to inquiries of the CPM or Energy Commission biological resources staff regarding biological resource issues, and provide the data described in paragraph 7 above to the CPM upon request;

9. Determine and oversee implementation of remedial actions any time water has been observed standing onsite in accordance with Condition of Certification **BIO-8**. The project owner shall initiate remedial methods in consultation with the Designated Biologist in accordance with Condition of Certification **BIO-8** after standing water has been observed on the project site. Remedial methods may include grading, pumping spraying, tilling, or any other means to disperse or ensure evaporation and/or absorption of standing water. Other remedial efforts may be determined in conjunction with CPM review and approval. Descriptions of remedial efforts, including photo documentation, and discussion of results of remedial efforts must be included in the Monthly Compliance Report;

10. Respond to reports of onsite kit fox mortality or injury, and to the extent possible, reports of dead or injured kit fox offsite and immediately adjacent the project boundaries or on access roads in accordance with Condition of Certification **BIO-17**, and undertake restorative and/or disease prevention actions as specified within the American Badger and Kit Fox Management Plan prepared in accordance with Condition of Certification **BIO-17**;

11. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Compliance Report;

12. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and USFWS guidelines on desert tortoise surveys and handling procedures <www.fws.gov/ventura/speciesinfo/protocols_guidelines> as well as all terms and conditions of the Biological Opinion; and

13. Maintain the ability to be in regular, direct communication with representatives of CDFW, USFWS, and the CPM, including notifying these agencies of dead or injured listed species and reporting special-status species observations to the California Natural Diversity Database (CNDDB).

Verification: The Designated Biologist shall provide copies of all written reports and summaries that document biological resources compliance activities in the Monthly Compliance Reports submitted to the CPM. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. During Project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his or her duties cease, as approved by the CPM.

BIOLOGICAL MONITOR SELECTION AND QUALIFICATIONS

BIO-3 The project owner's approved Designated Biologist shall submit the resume, at least three references, and contact information of the proposed Biological Monitors to the CPM. The resume shall demonstrate, to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks. The Biological Monitor is the equivalent of the USFWS designated Desert Tortoise Monitor (USFWS 2008).

Biological Monitor(s) training by the Designated Biologist shall include familiarity with the conditions of certification, BRMIMP, WEAP, and USFWS guidelines on desert tortoise surveys and handling procedures <www.fws.gov/ventura/speciesinfo/protocols_guidelines>.

Verification: The Project owner shall submit the specified information to the CPM for approval at least 45 days prior to the start of any site mobilization or construction activities. The Designated Biologist shall submit a written statement to the CPM confirming that individual Biological Monitor(s) has been trained including the date when training was completed. If additional biological monitors are needed during construction the specified information shall be submitted to the CPM for approval at least 10 days prior to their first day of monitoring activities.

BIOLOGICAL MONITOR DUTIES

BIO-4 The Biological Monitors shall assist the Designated Biologist in conducting surveys and in monitoring of site mobilization and construction **including** ground disturbance, site preparation, or permanent installation activities, including installation of desert tortoise exclusion fencing or reporting. The Designated Biologist shall remain the contact for the Project owner and the CPM, however, biological monitors will also respond directly to inquiries of the CPM or Energy Commission biological resources staff, and collect and provide reasonably available information to the CPM when requested. Neither the Designated Biologist nor the Biological Monitors shall be prohibited from contact with the CPM or Energy Commission biological resources staff, and the Designated Biologist and the Biological Monitors shall not be precluded from sharing their full and complete knowledge of project-related biological information with the CPM or Energy Commission biological resources staff.

Verification: The Designated Biologist shall submit in the Monthly Compliance Report to the CPM copies of all written reports and summaries that document biological resources compliance activities, including those conducted by Biological Monitors. If actions may affect biological resources during operation a Biological Monitor, under the supervision of the Designated Biologist, shall be available for monitoring and reporting.

DESIGNATED BIOLOGIST AND BIOLOGICAL MONITOR AUTHORITY

BIO-5 The Project owner's construction/operation manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources conditions of certification. The Project owner shall provide Energy Commission staff with reasonable access to the Project

site under the control of the Project owner and shall otherwise fully cooperate with the Energy Commission's efforts to verify the Project owner's compliance with, or the effectiveness of, mitigation measures set forth in the conditions of certification. The Designated Biologist shall have the authority to immediately stop any activity that is not in compliance with these conditions and/or order any reasonable measure to avoid take of an individual of a listed species. If required by the Designated Biologist and Biological Monitor(s) the Project owner's construction/operation manager shall halt all site mobilization and construction, including ground disturbance, site preparation, or permanent installation activities, including installation of desert tortoise exclusion fencing, and operation activities in areas specified by the Designated Biologist. The Designated Biologist shall:

1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;

2. Inform the Project owner and the construction/operation manager when to resume activities; and

3. Notify the CPM if there is a halt of any activities and advise them of any corrective actions that have been taken or would be instituted as a result of the work stoppage. If the work stoppage relates to desert tortoise or any other federal- or state-listed species, the Palm Springs Office of the USFWS and the Ontario Office of the CDFW shall also be notified.

If the Designated Biologist is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist. It is expected the Designated Biologist will be onsite as per **BIO-2**, or as otherwise directed by the CPM.

Verification: The Project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM and BLM immediately (and no later than the morning following the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, or operation activities. If the non-compliance or halt to construction or operation relates to desert tortoise or any other federal- or state-listed species, the Project owner shall also notify Palm Springs Office of the USFWS and the Ontario Office of the CDFW at the same time. The Project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the Project owner, a determination of success or failure will be made by the CPM in consultation with BLM, USFWS and CDFW within 5 working days after receipt of notice that corrective action is completed, or the Project owner would be notified by the CPM that coordination with other agencies would require additional time before a determination can be made.

WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

BIO-6 The Project owner shall develop and implement a Project-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the

WEAP from the CPM. The Project owner shall also provide the USFWS and CDFW a copy of all portions of the WEAP relating to desert tortoise and any other federal or state-listed species for review and comment. The WEAP shall be administered to all onsite personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. The WEAP shall be implemented during site mobilization and construction, commissioning, operation, non-operation, and closure. The WEAP shall:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media, including photographs of protected species and their habitat, is made available to all participants;

2. Discuss the locations and types of sensitive biological resources on the Project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that no snakes or other wildlife shall be intentionally harmed (unless posing a reasonable and immediate threat to humans);

3. Place special emphasis on desert tortoise, including pictures and information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;

4. Provide pictures of golden eagles, American badger, desert kit fox, Mojave fringe-toed lizard, and burrowing owl, provide information on sensitivity to human activities, legal protection, reporting requirements, and how to identify construction avoidance zones for these species as marked by flagging, staking, or other means, also describe the protections for bird nests and provide information as described above;

5. Provide overview for staff of potential impacts to reptiles and amphibians from vehicle strikes on all project roads (paved and unpaved) during construction, operations, closure phases, reporting requirements, and protection measures;

6. Provide overview of potential impacts to avian species from concentrated solar flux created during start up and operations phase, reporting requirements, and protection measures as required by the USFWS, CDFW, or CPM;

7. Include a discussion of fire prevention measures to be implemented by workers during Project activities and request workers to: a) dispose of cigarettes and cigars appropriately and not leave them on the ground or buried, b) keep vehicles on graveled or well-maintained roads at all times to prevent vehicle exhaust systems from coming in contact with roadside weeds, c) use and maintain approved spark arresters on all power equipment, and d) keep a fire extinguisher on hand at all times;

8. Describe the temporary and permanent habitat protection measures to be implemented at the Project site;

9. All onsite workers will be informed of the requirement to contact the Designated Biologist or Biological Monitors to report the location of any injured or dead birds or bats;

10. Identify whom to contact if there are further comments and questions about the material discussed in the program; and

11. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist, and documented within the Monthly Compliance Report.

Verification: At least 45 days prior to start of site mobilization and construction, the Project owner shall provide to the CPM for review and approval and to BLM, USFWS and CDFW a copy of the final WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program.

The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. At least 10 days prior to site mobilization and construction the project owner shall submit two copies of the approved final WEAP and implement the training for all workers.

Training acknowledgement forms signed during construction shall be kept on file by the project owner for at least 6 months after the start of commercial operation.

Throughout the life of the project, the WEAP shall be repeated annually for permanent employees, and shall be routinely administered within 1 week of arrival to any new construction personnel, foremen, contractors, subcontractors, and other personnel potentially working within the project area. Upon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection measures. These forms shall be maintained by the project owner and shall be made available to the CPM, BLM, USFWS and CDFW and upon request. Workers shall receive and be required to visibly display a hardhat sticker or certificate that they have completed the training.

During Project operation, signed statements for operational personnel shall be kept on file for 6 months following the termination of an individual's employment.

BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION AND MONITORING PLAN

BIO-7 The Project owner shall develop a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), and shall submit two copies of the proposed BRMIMP to the CPM and BLM for review and approval and USFWS and CDFW for review. The Project owner shall implement the measures identified in the approved BRMIMP. The BRMIMP shall incorporate avoidance and minimization measures described in final versions of the Desert Tortoise Translocation Plan~~,~~ the Raven Management Plan, the Closure, Conceptual Restoration Plan, the American Badger and Kit Fox Management Plan, the current version of the Bird and Bat Conservation Strategy, the Eagle Protection Plan, the Burrowing Owl Mitigation and Monitoring Plan, the Weed Management Plan, and all other individual biological mitigation and/or monitoring plans associated with the Project, or permits issued by the CDFW, BLM, and USFWS. The Project owner shall provide to CDFW and USFWS a copy of all portions of the BRMIMP relating to desert tortoise and any other federal or state-listed species for review and comment.

The BRMIMP shall be prepared in consultation with the Designated Biologist and shall include accurate and up-to-date maps depicting the location of sensitive biological resources that require temporary or permanent protection during construction and operation. The BRMIMP shall include complete and detailed descriptions of the following:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the Project owner;

2. All biological resources conditions of certification identified as necessary to avoid or mitigate impacts;

3. All biological resource mitigation, monitoring, and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion;

4. All sensitive biological resources to be impacted, avoided, or mitigated by Project construction, operation, and closure;

5. All required mitigation measures for each sensitive biological resource, including remedial actions for standing water onsite in accordance with Condition of Certification **BIO-8** and known or suspected disease outbreaks on the project site in accordance with Condition of Certification **BIO-17**;

6. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities; include one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. Provide planned timing of aerial photography and a description of why times were chosen. Provide a final accounting of the before/after whole acreages and a determination of whether more or less habitat compensation is necessary in the Construction Termination Report prepared in accordance with **BIO-29**

7. All measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;

8. Duration for each type of monitoring and a description of monitoring methodologies and frequency;

9. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;

10. All performance standards and remedial measures to be implemented if performance standards are not met;

11. Biological resources-related facility closure measures including a description of funding mechanism(s);

12. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and

13. A requirement to submit any sightings of any special-status species that are observed on or in proximity to the Project site, or during Project surveys, to the CNDDB per CDFW and BLM requirements.

Verification: The Project owner shall submit the draft BRMIMP to the CPM and BLM at least 45 days prior to start of any site mobilization and construction. At the same time the Project owner shall provide to CDFW and USFWS a copy of all portions of the draft BRMIMP relating to desert tortoise and any other federal or state-listed species. The Project owner shall provide final BRMIMP to the CPM, BLM, CDFW and USFWS at least 7 days prior to start of any site mobilization and construction. The BRMIMP shall contain all of the required measures included in all biological conditions of certification. No site mobilization or construction activities may occur prior to approval of the final BRMIMP by the CPM and BLM.

If any permits have not yet been received when the final BRMIMP is submitted, these permits shall be submitted to the CPM within 5 days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit condition(s). The Project owner shall submit to the CPM and BLM the revised or supplemented BRMIMP within 10 days following the Project owner's receipt of any additional permits. Under no circumstances shall ground disturbance proceed without implementation of all permit conditions.

To verify that the extent of construction disturbance does not exceed that described in these conditions, the Project owner shall submit aerial photographs, at an approved scale, taken before and after construction to the CPM, BLM, USFWS and CDFW. The first set of aerial photographs shall reflect site conditions prior to any site mobilization and construction activities, and shall be submitted prior to initiation of such activities. The second set of aerial photographs shall be taken subsequent to completion of construction, and shall be submitted to the CPM, BLM, USFWS and CDFW no later than 90 days after completion of construction. The Project owner shall also provide a final accounting in whole acres of vegetation communities/cover types present before and after construction. Construction acreages shall be rounded to the nearest acre.

Any changes to the approved BRMIMP must be approved by the CPM and BLM in consultation with CDFW and USFWS.

Implementation of BRMIMP measures (for example, construction activities that were monitored, species observed) shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of Project construction, the Project owner shall provide to the CPM, for review and approval, a written construction termination report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the Project's site mobilization and construction activities, and which mitigation and monitoring items are still outstanding. During operations, ongoing actions and activities within the BRMIMP will be reported in the Annual Compliance Report, or as otherwise directed by the CPM.

IMPACT AVOIDANCE AND MINIMIZATION MEASURES

BIO-8 The Project owner shall undertake the following measures to manage the Project site and related facilities during site mobilization, construction, operation and maintenance in a manner to avoid or minimize impacts to biological resources:

1. Limit Disturbance Areas. Minimize soil disturbance by locating staging areas, laydowns, and temporary parking or storage for linears in existing disturbed areas. Equipment maintenance and refueling shall not be conducted within 100 feet of any sensitive resource (for example, waters of the state, desert dry wash woodland, dune habitats and rare plant populations). Limit the width of the work area near sensitive resources. Avoid blading temporary access roads where feasible and instead drive over and crush the vegetation to preserve the seed bank and biotic soil crusts. The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) shall be delineated with stakes and flagging prior to site mobilization and construction activities in consultation with the Designated Biologist. Spoils and topsoil shall be stockpiled in disturbed areas lacking native vegetation and which do not provide habitat for special-status species. Parking areas, staging and disposal site locations shall similarly be located in areas without native vegetation or special-status species habitat. All disturbances, Project vehicles and equipment shall be confined to the flagged areas.

2. Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.

3. Minimize Traffic Impacts. Vehicular traffic during Project site mobilization, construction and operation shall be confined to existing routes of travel to and from the Project site, and cross country vehicle and equipment use

outside designated work areas shall be prohibited. The speed limit shall not exceed 25 miles per hour on paved or stabilized roads within the Project site, on access roads for linear facilities, or on other roads used by project vehicles. However, this restriction is superseded by speed limits posted by county or state roadway agencies. In these cases, project vehicles shall abide by posted speed limits. No vehicle speed shall exceed 15 miles per hour on roads within areas where Mojave fringe toed lizard are known to occur or have the potential to occur on site. If the CPM determines that excessive road mortality is occurring, then additional measures shall be implemented by the project owner in coordination with the Designated Biologist to reduce mortality which may include: installation of speed bumps in areas of high mortality, reduced speed limits in problematic areas, greater biological monitor presence, and enforcement actions against drivers who violate speed limits. Additional speed limit signs shall be posted within areas where Mojave fringe toed lizard are known to occur or have the potential to occur on site.

4. Monitor During Construction. In areas that have not been fenced with desert tortoise exclusion fencing and cleared, the Designated Biologist shall be present at the construction site during all Project activities that have potential to disturb soil, vegetation, and wildlife. Upon completion of desert tortoise fencing installation and clearing the Designated Biologist or Biological Monitor shall be present at the construction site during all Project activities that have potential to disturb soil, vegetation, and wildlife. The Designated Biologist or Biological Monitor shall clear ahead of equipment during brushing and grading activities. If desert tortoises are found during construction monitoring, procedures outlined in **BIO-9** shall be implemented.

5. Salvage or Relocate Wildlife during Ground Disturbance Activities. The Designated Biologist or Biological Monitor shall salvage or relocate sensitive wildlife during ground disturbance activities including clearing, grubbing, and grading operations when feasible to off-site habitat or out of harm's way. The species shall be salvaged or relocated when conditions will not jeopardize the health and safety of the monitor.

6. Minimize Impacts of Transmission/Pipeline Alignments, Roads, and Staging Areas. Staging areas for construction on the plant site shall be within the area that has been fenced with desert tortoise exclusion fencing and cleared. For construction activities outside of the plant site (transmission line, pipeline alignments) access roads, pulling sites, and storage and parking areas shall be designed, installed, and maintained with the goal of minimizing impacts to native plant communities and sensitive biological resources. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) S*uggested Practices for Avian Protection on Power Lines* (APLIC 2006) and *Mitigating Bird Collisions with Power Lines* (APLIC 1994) to reduce the likelihood of large bird electrocutions and collisions. Where feasible avoid

impacts to desert washes and special-status plants by adjusting the locations of poles and laydown areas, and the alignment of the roads and pipelines. Construction drawings and grading plans shall depict the locations of sensitive resources and demonstrate where temporary impacts to sensitive resources can be avoided and where they cannot.

7. Avoid Use of Toxic Substances. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants. Anticoagulants shall not be used for rodent control. Pre-emergents and other herbicides with documented residual toxicity shall not be used. Herbicides shall be applied in conformance with federal, State, and local laws and according to the guidelines for wildlife-safe use of herbicides in **BIO-14** (Weed Management Plan).

8. Minimize Lighting Impacts. Facility lighting shall be designed, installed, and maintained to prevent side casting of light towards wildlife habitat.

9. Minimize Noise Impacts. A continuous low-pressure technique shall be used for steam blows, to the extent possible, in order to reduce noise levels in sensitive habitat proximate to the Project site. Loud construction activities (e.g., unsilenced high pressure steam blowing, pile driving, or other) shall be avoided from February 15 to April 15, when it would result in noise levels over 65 dBA in nesting habitat (excluding noise from passing vehicles). Loud construction activities may be permitted from February 15 to April 15 only if:

   a. The Designated Biologist provides documentation (i.e., nesting bird data collected using methods described in **BIO-15** and maps depicting location of the nest survey area in relation to noisy construction) to the CPM indicating that no active nests would be subject to 65 dBA noise, OR

   b. The Designated Biologist or Biological Monitor monitors active nests within the range of construction-related noise exceeding 65 dBA. The monitoring shall be conducted in accordance with Nesting Bird Monitoring and Management Plan approved by the CPM. The Plan shall include adaptive management measures to prevent disturbance to nesting birds from construction related noise. Triggers for adaptive management shall be evidence of Project-related disturbance to nesting birds such as: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. The Nesting Bird Monitoring and Management Plan shall include a description of adaptive management actions, which shall include, but not be limited to, cessation of construction activities that are deemed by the Designated Biologist to be the source of disturbance to the nesting bird.

10. Avoid Vehicle Impacts to Desert Tortoise. Parking and storage shall occur within the area enclosed by desert tortoise exclusion fencing to the extent

feasible. No vehicles or construction equipment parked outside the fenced area shall be moved prior to an inspection of the ground beneath the vehicle for the presence of desert tortoise. If a desert tortoise is observed outside the areas fenced with desert tortoise exclusion fencing it shall be left to move on its own. If it does not move within 15 minutes, a Designated Biologist or Biological Monitor under the Designated Biologist's direct supervision may move it out of harm's way as described in the USFWS Desert Tortoise Field Manual (USFWS 2009a)

11. Install Box Culvert. To provide for connectivity for desert tortoise and other wildlife, the Project owner shall install a box culvert suitable for passage by desert tortoise and other wildlife under the Project Site Access Road. The box culvert shall be a concrete structure no less than 4 feet high and 6 feet wide with 3:1 side slopes and shall maintain a minimum of 18 inches of native material on the floor of the culvert at all times to facilitate tortoise movement.

12. Avoid Wildlife Pitfalls. To avoid trapping desert tortoise and other wildlife in trenches, pipes or culverts, the following measures shall be implemented:

    a. Backfill Trenches. At the end of each work day, the Designated Biologist or Biological Monitor shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) outside the area fenced with desert tortoise exclusion fencing have been backfilled. If backfilling is not feasible, all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with desert tortoise-exclusion fencing. All trenches, bores, and other excavations outside the areas permanently fenced with desert tortoise exclusion fencing shall be inspected periodically throughout the day, at the end of each workday, and at the beginning of each day by the Designated Biologist or a Biological Monitor. Should a tortoise or other wildlife become trapped, the Designated Biologist or Biological Monitor shall move the tortoise out of harm's way as described in the most recent USFWS Desert Tortoise Field Manual (currently USFWS 2009a). Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.

    b. Avoid Entrapment of Desert Tortoise. Any construction pipe, culvert, or similar structure with a diameter greater than 3 inches, stored less than 8 inches aboveground and within desert tortoise habitat (i.e., outside the permanently fenced area) for one or more nights, shall be inspected for tortoises before the material is moved, buried or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on elevated pipe racks. These materials would not need to be inspected or capped if they are stored within the permanently fenced area after the clearance surveys have been completed.

13. Minimize Standing Water. Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement shall use the minimal amount needed to meet safety and air quality standards in an effort to prevent the formation of puddles, which could attract desert tortoises and common ravens to construction sites. A Biological Monitor shall patrol these areas to ensure water does not puddle and shall take appropriate action to reduce water application where necessary.

14. Dispose of Road-killed Animals. Road killed animals or other carcasses detected by personnel on roads associated with the Project area will be reported immediately to a Biological Monitor or Designated Biologist (or Project Environmental Compliance Monitor, during Project operations), who will promptly remove the roadkill. For special-status species road-kill, the Biological Monitor or Designated Biologist (or Project Environmental Compliance Monitor, during Project operations) shall contact the CPM, CDFW, and USFWS within 1 working day of detection (within 8 hours in the case of a desert kit fox) of the carcass for guidance on disposal or storage of the carcass; all other road kill shall be disposed of promptly. Handling of desert kit fox carcasses shall follow handling requirements included in the **BIO-17** American Badger and Kit Fox Management Plan. The Biological Monitor shall provide the special-status species record as described in **BIO-11** below.

15. Minimize Spills of Hazardous Materials. All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Designated Biologist shall be informed of any hazardous spills immediately as directed in the Project Hazardous Materials Plan. Hazardous spills shall be immediately cleaned up and the contaminated soil properly disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.

16. Worker Guidelines. During construction all trash and food-related waste shall be placed in self-closing containers and removed daily from the site. Workers shall not feed wildlife or bring pets to the Project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons.

17. Avoid Spread of Noxious Weeds. The project owner shall implement the following Best Management Practices during construction and operation, and all other measures as required in the final approved Weed Management Plan (**BIO-14**) to prevent the spread and propagation of noxious weeds and other invasive plants:

    a. For work outside the project facility fenceline, limit the size of any vegetation and/or ground disturbance and limit ingress and egress to defined routes;

b. Prevent spread of non-native plants via vehicular sources by implementing Trackclean™ or other methods of vehicle cleaning for vehicles coming and going from construction sites. Earth-moving equipment shall be cleaned prior to transport to the construction site; and

c. Use only weed-free straw, hay bales, and seed for erosion control and sediment barrier installations.

18. Implement Sediment Control Measures Near Desert Washes. Standard erosion control measures shall be implemented for all phases of construction and operation where sediment run-off from exposed slopes threatens to enter waters of the state. Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream. Areas of disturbed soils (access and staging areas) which slope toward drainages shall be stabilized to reduce erosion potential.

19. Monitor Ground Disturbing Activities Prior to Pre-Construction Site Mobilization. If pre-construction site mobilization requires ground-disturbing activities such as for geotechnical borings or hazardous waste evaluations, a Designated Biologist or Biological Monitor shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.

20. Implement Erosion Control Measures. All disturbed soils and roads within the Project site shall be stabilized to reduce erosion potential, both during and following construction. All areas subject to temporary disturbance shall be restored to pre-project grade and stabilized to prevent erosion and promote natural revegetation. Temporarily disturbed areas within the Project area include, but are not limited to: linear facilities, temporary access roads, temporary lay-down and staging areas. If erosion control measures include the use of seed, only locally native plant species from a local seed source shall be used. Local seed includes seeds from plants within the Chuckwalla Valley or Colorado River Hydrologic Units.

21. Avoid Spreading Weeds. Prior to the start of site mobilization and construction, flag and avoid dense populations of highly invasive noxious weeds. If these areas cannot be avoided, they shall be pre-treated by the methods described in **BIO-14** (Weed Management Plan). Noxious weeds and other invasive non-native plants in the temporarily disturbed areas shall be managed according to the requirements in **BIO-14**.

21. Salvage Topsoil. Topsoil from the Project site shall be salvaged, preserved and re-used for restoration of temporarily disturbed areas. Salvaged topsoil shall be collected, stored and applied in a way that maintains the viability of seed and soil crusts. The Project owner shall excavate and collect the upper soil layer (the top 1 to 2 inches that includes the seed bank and biotic soil crust) as well as the lower soil layer up to a depth of 6 to 8 inches. The upper and lower soil layers shall be stockpiled separately

in areas that will not be impacted by other grading, flooding, erosion, or pollutants. If the soil is to be stored more than 2 weeks it shall be spread out to a depth of no more than 6 inches to maintain the seed and soil crust viability. The Project owner shall install temporary construction fencing around stockpiled topsoil, and signage that indicates whether the pile is the upper layer seed bank, or the lower layer, and clearly indicates that the piles are for use only in erosion control. After construction, the Project owner shall replace the topsoil in the temporarily disturbed areas in the reverse order of stockpiling, starting with the 6-8 inch layer of subsoil, and then the seed-containing upper layer using a harrow or similar equipment to thinly distribute the layer to depths no greater than 1 to 2 inches.

22. Decommission Temporary Access Roads with Vertical Mulching. Discourage ORV use of temporary construction roads by installing vertical mulching at the head of the road to a distance necessary to obscure the road from view. Boulder barricades and gates shall not be used unless the remainder of the site is fenced to prevent driving around the gate or barricade. Designated ORV routes and roads shall not be closed.

21. Vegetation Management Best Management Practices. All Mowing and Vegetation Management will follow the Best Management Practices (BMPs) for Wildlife Habitat as defined by BLM Handbook H-1601-1 or most current BLM guidance:

a. Minimize direct impacts to species of concern through appropriate mitigation measures (e.g. season of activity, etc.). Avoid treatments during critical periods for wildlife (e.g. breeding, nesting, foaling, etc.).

b. Consider habitat needs of bird populations (both migratory and non-migratory). Avoid activities that may disrupt nesting and breeding of sensitive bird species.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of Project construction, the Project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed. As part of the Annual Compliance Report, each year following construction the Designated Biologist shall provide a report to the CPM that describes compliance with avoidance and minimization measures to be implemented during operation (for example, a summary of the incidence of roadkilled animals during the year, implementation of measures to avoid toxic spills, erosion and sedimentation, efforts to enforce worker guidelines, etc.).

No less than 30 days prior to site mobilization and construction the Project owner shall provide the CPM, USFWS and CDFW with plans showing the design of a culvert under the Project Site Access Road that would provide access for desert tortoise and other wildlife. No less than 30 days after of completion of construction of the Project site access road the Project owner shall provide as-built drawings of the culvert.

If loud construction activities are proposed between February 15 to April 15 which would result in noise levels over 65 dBA in nesting habitat, the Project owner shall submit nest survey results (as described in 8a) to the CPM no more than 7 days before initiating such construction. If an active nest is detected within this survey area the Project owner shall submit a Nesting Bird Monitoring and Management Plan to the CPM for review and approval no more than 7 days before initiating noisy construction.

DESERT TORTOISE CLEARANCE SURVEYS AND FENCING

BIO-9 The project owner shall undertake appropriate measures to manage the project site and related facilities in a manner to avoid or minimize impacts to desert tortoise**.** Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling and other procedures shall be consistent with those described in the most recent USFWS' Desert Tortoise Field Manual (currently USFWS 2009a) http://www.fws.gov/ventura/speciesinfo/protocols_guidelines. The project owner shall also implement all terms and conditions described in the Biological Opinion prepared by USFWS. The project owner shall implement the following measures:

1. Desert Tortoise Fencing along Interstate 10. To avoid increases in vehicular-related mortality from disruption of local movement patterns along the existing ephemeral wash systems, permanent desert tortoise-proof fencing shall be installed along the existing freeway right-of-way fencing, on both sides of Interstate 10 (I-10) between the wash on the westernmost end of the PSEGS site and the easternmost wash associated with the PSEGS site (labeled as #10 and #13 in Wildlife Movement and Desert Tortoise Habitat [tn56755], AECOM 2010f). The project owner shall secure approval from California Department of Transportation (Caltrans) for the installation and maintenance of desert tortoise exclusion fencing prior to construction or repair. The tortoise fencing shall be designed to direct tortoises to existing undercrossing to provide safe passage under the freeway, and shall be inspected per 2.d. and maintained for the life of the Project. The project owner shall conduct any necessary biological resource surveys required by the land management entity (BLM or Caltrans) to acquire an encroachment permit and fund a maintenance agreement with Caltrans.

2. Desert Tortoise Exclusion Fence Installation. To avoid impacts to desert tortoises, permanent exclusion fencing shall be installed along the permanent perimeter security fence (boundaries) as phases are constructed. Temporary fencing shall be installed along any subset of the plant site phasing that does not correspond to permanent perimeter fencing. Temporary fencing shall be installed along linear features unless a Biological Monitor is present in the immediate vicinity of construction activities for the linear facility. All proposed alignments for permanent or temporary desert tortoise fencing shall be flagged and surveyed within 24 hours prior to the initiation of fence construction. Clearance surveys of the desert tortoise exclusionary fence and utility rights-of-way alignments shall be conducted by the Designated Biologist(s) using techniques outlined in

the most recent USFWS Desert Tortoise Field Manual (currently USFWS 2009a), , and may be conducted in any season with USFWS and CDFW approval. Biological Monitors may assist the Designated Biologist under his or her supervision. These fence clearance surveys shall provide 100-percent coverage of all areas to be disturbed and an additional transect along both sides of the fence line. Disturbance associated with desert tortoise exclusionary fence construction shall not exceed 30 feet on either side of the proposed fence alignment. Prior to the surveys the project owner shall provide to the CPM, CDFW and USFWS a figure clearly depicting the limits of construction disturbance for the proposed fence installation. The fence line survey area shall be 90 feet wide centered on the fence alignment. Where construction disturbance for fence line installation can be limited to 15 feet on either side of the fence line, this fence line survey area may be reduced to an area approximately 60 feet wide centered on the fence alignment. Transects shall be no greater than 15 feet apart. For the I-10 desert tortoise exclusion fence, the Project Owner may have a Designated Biologist present to clear ahead of fence construction and be present in the immediate vicinity of fence installation activities. Desert tortoise located within the utility ROW alignments shall be moved out of harm's way in accordance with the most recent USFWS Desert Tortoise Field Manual (USFWS 2009a). Any desert tortoise detected during clearance surveys for fencing within the plant site and along the perimeter fence alignment shall be translocated and monitored in accordance with the Desert Tortoise Relocation/Translocation Plan (**BIO-10**). Tortoise shall be handled by the Designated Biologist(s) in accordance with the USFWS' Desert Tortoise Field Manual (USFWS 2009).

a. Timing and Supervision of Fence Installation. The exclusion fencing shall be installed in any area subject to disturbance prior to the onset of site clearing and grubbing in that area. The fence installation shall be supervised by the Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present.

b. Fence Material and Installation. All desert tortoise exclusionary fencing shall be constructed in accordance with the most recent USFWS' Desert Tortoise Field Manual (currently USFWS 2009) (Chapter 8 – Desert Tortoise Exclusion Fence)).

c. Security Gates. Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. The gates may be electronically activated to open and close immediately after the vehicle(s) have entered or exited to prevent the gates from being kept open for long periods of time.

d. Fence Inspections. Following installation of the desert tortoise exclusion fencing for both the permanent and temporary fencing, the fencing shall be regularly inspected. If tortoise were moved out of harm's way during fence construction, permanent and temporary fencing shall be inspected at least two times a day for the first 7 days

to ensure a recently moved tortoise has not been trapped within the fence. Thereafter, permanent fencing shall be inspected monthly and within 24 hours following all major rainfall events or after notification of an accident. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within 48 hours of observing damage. Repairs on I-10 fencing shall occur after any required authorization from Caltrans for work within their Right-of-Way. Inspections of permanent site fencing shall occur for the life of the project. Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rainfall events. All temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted tortoise entry while damaged, the Designated Biologist shall inspect the area for tortoise.

3. Desert Tortoise Clearance Surveys within the Plant Site. Clearance surveys shall be conducted in accordance with the USFWS Desert Tortoise Field Manual (USFWS 2009) (Chapter 6 – Clearance Survey Protocol for the Desert Tortoise – Mojave Population) or the most recent USFWS Desert Tortoise Field Manual (currently USFWS 2009a) and shall consist of two surveys covering 100 percent the project area by walking transects no more than 15-feet apart. If a desert tortoise is located on the second survey, a third survey shall be conducted. To maximize the opportunity to find all tortoises, each separate survey shall be walked in a different direction**,** in opposite directions, and/or offset to allow opposing angles of observation, or as directed in the Biological Opinion. Clearance surveys of the plant site may only be conducted when tortoises are most active (April through May or September through October) unless the project receives approval from CDFW and USFWS. Clearance surveys of linear features may be conducted during anytime of the year. Any tortoise located during clearance surveys of the power plant site and linear features shall be translocated or relocated and monitored in accordance with the Desert Tortoise Relocation/Translocation Plan:

   a. Burrow Searches. During clearance surveys all desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, shall be examined by the Designated Biologist, who may be assisted by the Biological Monitors, to assess occupancy of each burrow by desert tortoises and handled in accordance with the USFWS Desert Tortoise Field Manual (USFWS 2009a). To prevent reentry by a tortoise or other wildlife, all burrows shall be collapsed once absence has been determined in accordance with the Desert Tortoise Relocation/Translocation Plan. Tortoises taken from burrows and from elsewhere on the power plant site shall be relocated or translocated as described in the Desert Tortoise Relocation/Translocation Plan.

b. Burrow Excavation/Handling. All potential desert tortoise burrows located during clearance surveys would be excavated by hand, tortoises removed, and collapsed or blocked to prevent occupation by desert tortoises in accordance with the Desert Tortoise Relocation/Translocation Plan. All desert tortoise handling, and removal, and burrow excavations, including nests, would be conducted by the Designated Biologist, who may be assisted by a Biological Monitor in accordance with the USFWS Desert Tortoise Field Manual (USFWS 2009) or more recent guidance approved by the CPM.

4. Monitoring Following Clearing. Following the desert tortoise clearance and removal from the power plant site and utility corridors, workers and heavy equipment shall be allowed to enter the project site to perform clearing, grubbing, leveling, and trenching activities. A Designated Biologist or Biological Monitor shall be onsite for clearing and grading activities to move tortoises missed during the initial tortoise clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in the Desert Tortoise Relocation/Translocation Plan.

5. Reporting. The Designated Biologist shall record the following information for any desert tortoises handled: a) the locations (narrative and maps) and dates of observation; b) general condition and health, including injuries, state of healing and whether desert tortoise voided their bladders; c) location moved from and location moved to (using GPS technology); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled desert. Desert tortoise moved from within project areas shall be marked and monitored in accordance with the Desert Tortoise Relocation/Translocation Plan.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of desert tortoise clearance surveys the Designated Biologist shall submit a report to BLM, the CPM, USFWS, and CDFW describing implementation of each of the mitigation measures listed above. The report shall include the desert tortoise survey results, capture and release locations of any relocated desert tortoises, and any other information needed to demonstrate compliance with the measures described above.

Within 6 months of completion of desert tortoise exclusion fence, I-10 desert tortoise exclusion fencing shall be installed. Within 3 months of completion of I-10 desert tortoise exclusion fence construction, the Project owner shall provide the CPM, BLM, USFWS, and CDFW with maps as well as photographic documentation showing the design and location of the fencing on both sides of I-10 south of the Project site.

The Project Owner shall provide evidence of approval from Caltrans for installation of desert tortoise fencing along I-10 within their right-of-way at least 30-days prior to construction of the fencing.

DESERT TORTOISE RELOCATION/TRANSLOCATION PLAN

BIO-10 The Project owner shall develop and implement a final Desert Tortoise Relocation/Translocation Plan (Plan) that is consistent with current USFWS approved guidelines, and meets the approval of the CPM. The Plan shall include guidance specific to each of the two phases of Project construction, as described in **BIO-29** (Phasing), and shall include measures to minimize the potential for repeated translocations of individual desert tortoises. The goals of the Desert Tortoise Relocation/Translocation Plan shall be to: relocate/translocate all desert tortoises from the project site to nearby suitable habitat; minimize impacts on resident desert tortoises outside the project site; minimize stress, disturbance, and injuries to relocated/translocated tortoises; and assess the success of the translocation effort through monitoring**.** The revised draft Plan shall be based on the draft Desert Tortoise Relocation/Translocation Plan prepared by the prior project owner (AECOM 2010a, DR-BIO-55) and shall include all revisions deemed necessary by BLM, USFWS, CDFW and the Energy Commission staff.

Verification: At least 60 days prior to site mobilization and construction the Project owner shall provide the CPM with a revised draft of a Plan to the CPM for review and approval in consultation with BLM, USFWS and CDFW. At least 30 days prior to site mobilization and construction, the Project owner shall provide the CPM with the final version of a Plan that has been reviewed and approved by the CPM in consultation with BLM, USFWS and CDFW. All modifications to the approved Plan shall be made only after approval by the CPM, in consultation with BLM, USFWS and CDFW.

Within 30 days after initiation of relocation and/or translocation activities, the Designated Biologist shall provide to the CPM for review and approval, a written report identifying which items of the Plan have been completed, and a summary of all modifications to measures made during implementation of the Plan.

DESERT TORTOISE COMPLIANCE VERIFICATION

BIO-11 The Project owner shall provide Energy Commission, BLM, CDFW, and USFWS staff with reasonable access to the Project site and compensation lands under the control of the Project owner and shall otherwise fully cooperate with the Energy Commission's and BLM's efforts to verify the Project owner's compliance with, or the effectiveness of, mitigation measures set forth in the conditions of certification. The Designated Biologist shall do all of the following:

1. Notification. Notify the CPM at least 14 calendar days before initiating site mobilization and construction activities; immediately notify the CPM in writing if the Project owner is not in compliance with any conditions of certification, including but not limited to any actual or anticipated failure to implement mitigation measures within the time periods specified in the conditions of certification;

2. Monitoring During Grubbing and Grading. Remain onsite daily while vegetation salvage, grubbing, grading and other ground-disturbance construction activities are taking place to avoid or minimize take of listed

species, and verify personally or use Biological Monitors to check for compliance with all impact avoidance and minimization measures, including checking all exclusion zones to ensure that signs, stakes, and fencing are intact and that human activities are restricted in these protective zones.

3. Monthly Compliance Inspections. Conduct compliance inspections at a minimum of once per month after ground disturbance activities including clearing, grubbing, and grading are completed and submit a monthly compliance report to the CPM, BLM, USFWS and CDFW during construction

4. Notification of Injured or Dead Listed Species. If an injured or dead listed species is detected within or near the Project Disturbance Area the CPM, BLM, the Ontario Office of CDFW, and the Palm Springs Office of USFWS shall be notified immediately by phone and email. Notification shall occur no later than noon on the business day following the event if it occurs outside normal business hours so that the agencies can determine if further actions are required to protect listed species (within 8 hours in the case of desert kit fox). Written follow-up notification via FAX or electronic communication shall be submitted to these agencies within two calendar days of the incident and include the following information as relevant:

    a. Injured Desert Tortoise. If a desert tortoise is injured as a result of Project-related activities during construction, the Designated Biologist or approved Biological Monitor shall immediately take it to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Any veterinarian bills for such injured animals shall be paid by the Project owner. Following phone notification as required above, the CPM, CDFW, and USFWS shall determine the final disposition of the injured animal, if it recovers. Written notification shall include, at a minimum, the date, time, and location, circumstances of the incident, and the name of the facility where the animal was taken.

    b. Desert Tortoise Fatality. If a desert tortoise is killed by Project-related activities during construction or operation, a written report with the same information as an injury report shall be submitted to the CPM, BLM, the Ontario Office of CDFW, and the Palm Springs Office of USFWS. These desert tortoises shall be salvaged according to guidelines described in *Salvaging Injured, Recently Dead, Ill, and Dying Wild, Free-Roaming Desert Tortoise* (Berry 2001) or most recent guidelines approved by the CPM. The Project owner shall pay to have the desert tortoises transported and necropsied. The report shall include the date and time of the finding or incident.

5. Final Listed Species Report. The Designated Biologist shall provide the CPM and BLM a Final Listed Species Mitigation Report that includes, at a minimum: 1) a copy of the table in the BRMIMP with notes showing when each of the mitigation measures was implemented; 2) all available information about Project-related incidental take of listed species; 3)

information about other Project impacts on the listed species; 4) construction dates; 5) an assessment of the effectiveness of conditions of certification in minimizing and compensating for Project impacts; 6) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future Projects on the listed species; and 7) any other pertinent information, including the level of take of the listed species associated with the Project.

6. Stop Work Order. The CPM may issue the Project owner a written stop work order to suspend any activity related to the construction or operation of the Project to prevent or remedy a violation of one or more conditions of certification (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or candidate species. The Project owner shall comply with the stop work order immediately upon receipt thereof.

Verification: No later than 2 days following the above required notification of a sighting, injury, kill, or relocation of a listed species, the Project owner shall deliver to the CPM, BLM, CDFW, and USFWS via FAX or electronic communication the written report from the Designated Biologist describing all reported incidents of injury, kill, or relocation of a listed species, identifying who was notified, and explaining when the incidents occurred. In the case of a sighting in an active construction area, the Project owner shall, at the same time, submit a map (e.g., using Geographic Information Systems) depicting both the limits of construction and sighting location to the CPM, BLM, CDFW and USFWS.

No later than 45 days after initiation of Project operation the Designated Biologist shall provide the CPM and BLM a Final Listed Species Mitigation Report.

Beginning with the first month after clearing, grubbing and grading are completed and continuing every month until construction is complete the Project owner shall submit a report describing the results of Monthly Compliance Inspections to the CPM, BLM, USFWS and CDFW.

DESERT TORTOISE COMPENSATORY MITIGATION

BIO-12 To fully mitigate for habitat loss and potential take of desert tortoise, the Project owner shall provide compensatory mitigation per **BIO-29 – Table 2**, adjusted to reflect the final Project footprint. For purposes of this condition, the Project footprint means all lands disturbed in the construction and operation of the Palen Project, including all Project linears, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable long-term habitat for the desert tortoise. To satisfy this condition, the Project owner shall acquire, protect and transfer 5 acres of desert tortoise habitat for every acre of habitat within critical habitat and within the final Project footprint, and 1 acre of desert tortoise habitat for every acre of habitat outside of critical habitat but within the final Project footprint, and provide associated funding for the acquired lands, as specified below. Condition **BIO-28** may provide the Project owner with one means for satisfying some or all of the requirements in this condition. In lieu of acquiring lands itself, the Project

owner may satisfy the requirements of this condition by depositing funds into the Renewable Energy Action Team (REAT) or with another CPM-approved entity , as provided below in section 3.i. of this condition.

The timing of the mitigation shall correspond with the timing of the site disturbance activities as stated in **BIO-29** (phasing). If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement and long-term management of compensation lands include all of the following:

1. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition in fee title or in easement shall:

    a. be within the Colorado Desert Recovery Unit, with potential to contribute to desert tortoise habitat connectivity and build linkages between desert tortoise designated critical habitat, known populations of desert tortoise, and/or other preserve lands;

    b. provide habitat for desert tortoise with capacity to regenerate naturally when disturbances are removed;

    c. be prioritized near larger blocks of lands that are either already protected or planned for protection, such as DWMAs within the Colorado Desert Recovery Unit (Chuckwalla DWMA as first priority, Chemehuevi DMWA as the second) or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;

    d. be connected to lands with desert tortoise habitat equal to or better quality than the Project Site, ideally with populations that are stable, recovering, or likely to recover;

    e. not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;

    f. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;

    g. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and

    h. have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFW, BLM and USFWS, agrees in writing to the acceptability of the land.

2. Review and Approval of Compensation Lands Prior to Acquisition. The Project owner shall submit a formal acquisition proposal to the CPM, CDFW, USFWS, and BLM describing the parcel(s) intended for purchase.

This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for desert tortoise in relation to the criteria listed above. Approval from the CPM and CDFW, in consultation with BLM and the USFWS, shall be required for acquisition of all compensatory mitigation parcels.

3. Compensation Lands Acquisition Requirements. The Project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM and CDFW, in consultation with BLM and the USFWS, have approved the proposed compensation lands:

   a. Preliminary Report. The Project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM and CDFW. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM and CDFW, in consultation with BLM and the USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board.

   b. Title/Conveyance. The Project owner shall transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement as required by the CPM and CDFW. Transfer of either fee title or an approved conservation easement will usually be sufficient, but some situations, e.g., the donation of lands burdened by a conservation easement to BLM, will require that both types of transfers be completed. Any transfer of a conservation easement or fee title must be to CDFW, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM under terms approved by the CPM and CDFW. If an approved non-profit organization holds title to the compensation lands, a conservation easement shall be recorded in favor of CDFW in a form approved by CDFW. If an approved non-profit holds a conservation easement, CDFW shall be named a third party beneficiary. If a Security is provided, the project owner or an approved third party shall complete the proposed compensation lands acquisition within 18 months of the start of project ground-disturbing activities.

   c. Initial Habitat Improvement Fund. The Project owner shall fund the initial protection and habitat improvement of the compensation lands. Alternatively, a non-profit organization may hold the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965) and if it meets the approval of CDFW and the CPM. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.

d. Property Analysis Record. Upon identification of the compensation lands, the Project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate long-term maintenance and management fee to fund the in-perpetuity management of the acquired mitigation lands.

e. Long-term Maintenance and Management Fund. In accordance with **BIO-29** (phasing), the Project owner shall deposit in REAT Account, or with another CPM-approved entity, a capital long-term maintenance and management fee in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands.

The CPM, in consultation with CDFW, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFW takes fee title to the compensation lands, CDFW shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.

f. Interest, Principal, and Pooling of Funds. The Project owner shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:

i. Interest. Interest generated from the initial capital long-term maintenance and management fee shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands.

ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFW or the approved third-party long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates another entity to manage the long-term maintenance and management fee for CDFW.

iii. Pooling Long-Term Maintenance and Management Fee Funds. CDFW, or a CPM-and CDFW-approved non-profit organization

qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the endowment with other endowments for the operation, management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFW and CPM.

g. Other expenses. In addition to the costs listed above, the Project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to title and document review costs, expenses incurred from other state agency reviews, and overhead related to providing compensation lands to CDFW or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures.

h. Mitigation Security. The Project owner shall provide financial assurances in accordance with **BIO-29** (phasing) to the CPM and CDFW with copies of the document(s) to BLM and the USFWS, to guarantee that an adequate level of funding is available to implement the mitigation measures described in this condition. These funds shall be used solely for implementation of the measures associated with the Project in the event the Project owner fails to comply with the requirements specified in this condition, or shall be returned to the Project owner upon successful compliance with the requirements in this condition. The CPM's or CDFW's use of the security to implement measures in this condition may not fully satisfy the Project owner's obligations under this condition. Financial assurance can be provided to the CPM and CDFW in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security"). Prior to submitting the Security to the CPM, the Project owner shall obtain the CPM's approval in consultation with CDFW. BLM and the USFWS, of the form of the Security. Security shall be provided as described in **BIO-29 – Table 3** and the beginning of the conditions of certification subsection. The actual costs to comply with this condition will vary depending on the final footprint of the Project and its two phases, and the actual costs of acquiring, improving and managing the compensation lands.

i. REAT Account. The Project owner may elect to fund the acquisition and initial improvement of compensation lands by depositing funds for that purpose into the REAT Account. Initial deposits for this purpose must be made in the same amounts as the security required in section 3.h., above, and may be provided in lieu of security. If this option is used for the acquisition and initial improvement, the Project owner shall make an additional deposit into the REAT Account if necessary to cover the actual acquisition costs and administrative costs and fees of the compensation land purchase once land is identified and the actual

costs are known. If the actual costs for acquisition and administrative costs and fees are less than described in **Biological Resources Table 6b**, the excess money deposited in the REAT Account shall be returned to the Project owner. Money deposited for the initial protection and improvement of the compensation lands shall not be returned to the Project owner.

The responsibility for acquisition of compensation lands may be delegated to an authorized third party, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission and CDFW. Such delegation shall be subject to approval by the CPM and CDFW, in consultation with BLM and USFWS, prior to land acquisition, initial protection or maintenance and management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be implemented with 18 months of the Energy Commission's approval.

Verification: If the mitigation actions required under this condition are not completed prior to the start of ground-disturbing activities including site mobilization and construction, the Project owner shall provide the CPM and CDFW with an approved form of Security in accordance with this condition of certification no later than 30 days prior to beginning Project ground-disturbing activities, including site mobilization and construction. Actual Security shall be provided no later than 7 days prior to the beginning of Project ground-disturbing activities. If Security is provided, the Project owner, or an approved third party, shall complete and provide written verification to the CPM, CDFW, BLM and USFWS of the compensation lands acquisition and transfer within 18 months of the start of Project ground-disturbing activities, including site mobilization and construction.

The Project owner may elect to fund the acquisition and initial improvement of compensation lands through the REAT or other approved third party by depositing funds for that purpose into the REAT Account. Initial deposits for this purpose must be made in the same amounts as the Security required in section 3.h. of this condition. Payment of the initial funds for acquisition and initial improvement must be made at least 30 days prior to the start of ground-disturbing activities.

No fewer than 90 days prior to acquisition of the property, the Project owner shall submit a formal acquisition proposal to the CPM, CDFW , USFWS, and BLM describing the parcels intended for purchase and shall obtain approval from the CPM and CDFW prior to the acquisition.

No fewer than 30 days after acquisition of the property the Project owner shall deposit the funds required by Section 3e above (long term management and maintenance fee) and provide proof of the deposit to the CPM.

The Project owner, or an approved third party, shall provide the CPM, CDFW, BLM, and USFWS with a management plan for the compensation lands within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall

review and approve the management plan for the compensatory mitigation lands, in consultation with CDFW, BLM and the USFWS.

Within 90 days after completion of all project related ground disturbance, the Project owner shall provide to the CPM, CDFW, BLM and USFWS an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during Project construction. This shall be the basis for the final number of acres required to be acquired.

RAVEN MANAGEMENT PLAN AND FEE

BIO-13 The Project owner shall implement a Raven Monitoring, Management, and Control Plan (Raven Plan) that is consistent with the most current USFWS-approved raven management guidelines, and which meets the approval of the CPM, in consultation with USFWS and CDFW. The draft Common Raven Monitoring, Management, and Control Plan submitted by the project owner (AECOM 2010a, Attachment DR-BIO-57) shall provide the basis for the revised draft and final Raven Plan, subject to review, revisions and approval from the CPM, CDFW and USFWS. The Raven Plan shall include but not be limited to a program to monitor raven presence in the Project vicinity, determine if raven numbers are increasing, and to implement raven control measures as needed based on that monitoring. The purpose of the plan is to avoid any Project-related increases in raven numbers during construction, operation, and closure. In addition, the Project owner shall also provide funding for implementation of the USFWS Regional Raven Management Program, as described below.

1. The Raven Plan shall:
    a. Identify conditions associated with the Project that might provide raven subsidies or attractants;
    b. Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities;
    c. Describe control practices for ravens;
    d. Establish thresholds that would trigger implementation of control practices;
    e. Address monitoring and nest removal during construction and for the life of the Project, and;
    f. Discuss reporting requirements.
2. <u>USFWS Regional Raven Management Program</u>. The Project owner shall submit payment to the project sub-account of the REAT Account to support the USFWS Regional Raven Management Program. The one-time fee shall be as described by the USFWS in the *Renewable Energy Development and Common Raven Predation on the Desert Tortoise – Summary, dated May 2010* (USFWS 2010a) and the Cost Allocation

Methodology for Implementation of the Regional Raven Management Plan, dated July 9, 2010) or more current guidance as provided by USFWS or CDFG~~W~~ (USFWS 2010b).

Verification: At least 45 days prior to any project-related ground disturbance activities, the project owner shall submit the revised draft Raven Plan to the CPM for review and approval and CDFW and USFWS for review and comment. No less than 10 days prior to the start of any Project-related ground disturbance activities, including pre-construction site mobilization, the Project owner shall provide the CPM, USFWS, and CDFW with the final version of a Raven Plan. All modifications to the approved Raven Plan shall be made only with approval of the CPM in consultation with USFWS and CDFW.

No less than 10 days prior to the start of any Project-related ground disturbance, including pre-construction site mobilization, activities for each phase of Project construction as described in **BIO-29**, the Project owner shall provide documentation to the CPM, CDFW and USFWS that the one-time fee for the USFWS Regional Raven Management Program of has been deposited to the REAT-NFWS subaccount for the Project. Payment of the fees may be phased as described in **BIO-29 – Table 3**.

Within 30 days after completion of Project construction, the Project owner shall provide to the CPM for review and approval, a written report identifying which items of the Raven Plan have been completed, a summary of all modifications to mitigation measures made during the Project's construction phase, and which items are still outstanding.

As part of the annual compliance report, each year following construction the Designated Biologist shall provide a report to the CPM that includes: a summary of the results of raven management and control activities for the year; a discussion of whether raven control and management goals for the year were met; and recommendations for raven management activities for the upcoming year.

WEED MANAGEMENT PLAN

BIO-14 The Project owner shall implement a Weed Management Plan (Plan) that meets the approval of the CPM. The objective of the Plan shall be to prevent the introduction of any new weeds and the spread of existing weeds as a result of Project site mobilization**,** construction, operation, and closure. The Draft Weed Management Plan, submitted by theproject owner (Palen 2013u, Response to Data Request 52) shall provide the basis for the final Plan, subject to review and revisions from the CPM and the BLM. The Plan shall include the following:

1. **Weed Plan Requirements**. The Project owner shall provide a map to the CPM indicating the location of the Weed Management Area, which shall include all areas within 100 feet of the Project Disturbance Area, access roads, staging and laydown sites, and all other areas subject to temporary disturbance. The Project owner shall provide a Plan for the Weed Management Area includes at a minimum the following information: specific weed management objectives and measures for each target non-native weed species; baseline conditions; a map of the Weed

Management Areas; map of existing populations of target weeds within 100 feet of the Project Disturbance Area and access roads; weed risk assessment; measures to prevent the introduction and spread of weeds; measures to minimize the risk of unintended harm to wildlife and other plants from weed control activities; monitoring and surveying methods; and reporting requirements. Weed control described in the Plan shall focus on prevention, early detection of new infestations, and early eradication for the life of the Project. Weed control along the Project linears shall be limited to the areas where soils were disturbed during construction. Weed monitoring shall occur a minimum of once per year during the early spring months (March-April) to detect seedlings before they set seed. The focus of the Plan shall be on avoiding the introduction of new invasive weeds or the spread of highly invasive species, such as Sahara mustard. Non-native species with low ecological risk, or that are very widespread, such as Mediterranean grass, shall be noted but control shall not be required. When detected, infestations of high priority species shall be eradicated immediately.

2. **Avoidance and Treatment of Dense Weed Populations**. The Plan shall include a requirement to flag and avoid dense populations of the most invasive non-native weeds during any Project-related construction operation in or adjacent to infestations. If these areas cannot be avoided, they shall be pre-treated by one of the following methods: a) treating the infested areas in the season prior to construction by removing and properly disposing of seed heads by hand, prior to maturity, or spraying the new crop of plants that emerge in early spring, the season prior to construction, to reduce the viable seed contained in the soil, or b) removing and disposing the upper 2 inches of soil and disposing it offsite at a sanitary landfill or other site approved by the County Agricultural Commissioner , or burying the infested soil, e.g., under the solar facility or in a pit, and covering the infested soil with at least three feet of uncontaminated soil.

3. **Cleaning Vehicles and Equipment**. The Plan shall include specifications and requirements for the cleaning and removal of weed seed and weed plant parts from vehicles and equipment involved in Project-related construction and operation. Vehicles and equipment working in weed-infested areas (including previous job sites) shall be required to clean the equipment tires, tracks, and undercarriage *before* entering the Project area and before moving to infested areas of the Project Disturbance Area to uninfested areas. Cleaning shall be conducted on all track and bucket/blade components to adequately remove all visible dirt and plant debris. Cleaning using hand tools, such as brushes, brooms, rakes, or shovels, is preferred. If water must be used, the water/slurry shall be contained to prevent seeds and plant parts from washing into adjacent habitat.

4. **Safe Use of Herbicides**. The final Plan shall include detailed specifications for avoiding herbicide and soil stabilizer drift, and shall

include a list of herbicides and soil stabilizers that will be used on the Project with manufacturer's guidance on appropriate use and include a copy of the Pesticide Use Permit issued by BLM if such permit is required. The Plan shall indicate where the herbicides will be used, and what techniques will be used to avoid chemical drift or residual toxicity to special-status species and their pollinators, and consistent with the Nature Conservancy guidelines and the criteria under #2, below. Only weed control measures for target weeds with a demonstrated record of success shall be used, based on the best available information from sources such as The Nature Conservancy's The Global Invasive Species Team, California Invasive Plant Council: http://www.cal-ipc.org/ip/management/plant_profiles/index.php, and the California Department of Food & Agriculture Encycloweedia: http://www.cdfa.ca.gov/phpps/ipc/encycloweedia/encycloweedia_h p.htm.

5. The methods for weed control described in the final Plan shall meet the following criteria:

   a. Manual: Well-timed removal of plants or seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Riverside County Agricultural Commissioner.

   b. Chemical: Herbicides known to have residual toxicity, such as pre-emergents and pellets, shall not be used in natural areas or within the engineered channels. Only the following application methods may be used: wick (wiping onto leaves); inner bark injection; cut stump; frill or hack and squirt (into cuts in the trunk); basal bark girdling; foliar spot spraying with backpack sprayers or pump sprayers at low pressure or with a shield attachment to control drift, and only on windless days, or with a squeeze bottle for small infestations (see Nature Conservancy guidelines described above);

   c. Biological: Biological methods may be used subject to review and approval by CDFW and USFWS and only if approved for such use by CDFA, and are either locally native species or have no demonstrated threat of naturalizing or hybridizing with native species;

   d. Mechanical: Disking, tilling, and mechanical mowers or other heavy equipment shall not be employed in natural areas but hand weed trimmers (electric or gas-powered) may be used. Mechanical trimmers shall not be used during periods of high fire risk and shall only be used with implementation of fire prevention measures.

Verification: No less than 10 days prior to start of any Project-related ground disturbance activities including site mobilization and construction, the Project owner shall provide the CPM with the final version of a Weed Management Plan that has been reviewed by BLM and Energy Commission staff. Modifications to the approved Weed Control Plan shall be made only with approval from the CPM in consultation with BLM.

Within 30 days after completion of Project construction, the Project owner shall provide to the CPM for review and approval, a written report identifying which items of the Weed Management Plan have been completed, a summary of all modifications to mitigation measures made during the Project's construction phase, and which items are still outstanding.

As part of the Annual Compliance Report, each year following construction the Designated Biologist shall provide a report to the CPM and BLM that includes: a summary of the results of noxious weeds surveys and management activities for the year; a discussion of whether weed management goals for the year were met; and recommendations for weed management activities for the upcoming year.

PRE-CONSTRUCTION NEST SURVEYS AND AVOIDANCE MEASURES

BIO-15 Pre-construction nest surveys shall be conducted if site mobilization and construction activities would occur from February 1 through July 31. The Designated Biologist or Biological Monitor conducting the surveys shall be experienced bird surveyors familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). The goal of the nesting surveys shall be to identify the general location of the nest sites, sufficient to establish a protective buffer zone around the potential nest site, and need not include identification of the precise nest locations. Surveyors performing nest surveys shall not concurrently be conducting desert tortoise surveys. The bird surveyors shall perform surveys in accordance with the following guidelines:

1. Surveys shall cover all potential nesting habitat in areas that could be disturbed by each phase of construction, as described in **BIO-29** (Phasing). Surveys shall also include areas within 500 feet of the boundaries of the active construction areas (including linear facilities);

2. At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. One of the surveys shall be conducted within the 14-day period preceding initiation of construction activity. Additional follow-up surveys may be required if periods of construction inactivity exceed three weeks, an interval during which birds may establish a nesting territory and initiate egg laying and incubation;

3. If active nests or suspected active nests are detected during the survey, a buffer zone (protected area surrounding the nest, the size of which is to be determined by the Designated Biologist in consultation with CDFW) and monitoring plan shall be developed. Nest locations shall be mapped and submitted, along with a report stating the survey results, to the CPM; and

4. The Designated Biologist or Biological Monitor shall monitor the nest until he or she determines that nestlings have fledged and dispersed; activities that might, in the opinion of the Designated Biologist, disturb nesting activities, shall be prohibited within the buffer zone until such a determination is made.

Verification: At least 10 days prior to the start of any site mobilization and construction -related ground disturbance activities during the nesting season, the

Project owner shall provide the CPM a letter-report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity and qualifications of the surveyor (s); and a list of species observed. If active or suspected active nests are detected during the survey, the report shall include a map or aerial photo identifying the location or suspected location of the nest and shall depict the boundaries of the no-disturbance buffer zone around the nest(s) that would be avoided during Project construction.

Each year during construction as part of the annual compliance report a follow-up report shall be provided to the CPM, BLM, CDFW, and USFWS describing the success of the buffer zones in preventing disturbance to nesting activity and a brief description of the outcome of the nesting effort (for example, whether young were successfully fledged from the nest or if the nest failed).

AVIAN ENHANCEMENT AND CONSERVATION PLAN

BIO-16a The Project owner shall implement the following measure to conserve and enhance avian populations in the vicinity of the project and throughout the region:

1. Regional Avian Electrocution Risk and Cable Collision Avoidance Measures. Consistent with the DRECP framework (DRECP 2012), the project owner shall, prior to the commencement of commercial operations at the facility, fund the retrofitting of non-compliant utility poles in the vicinity of the project to APLIC (2006) standards or fund the installation of bird diverters in the vicinity of the Project. A total amount of $300,000 will be provided for these enhancements. The funding shall be provided to an independent third party who will perform the actual retrofitting, pursuant to a Retrofit Plan approved by the CPM.

   The Retrofit Plan will develop a tiered approach to minimizing electrocution and collision risk, wherein the first funding is applied to retrofit poles in areas where either mortalities are highest or area use is highest. The second tier of retrofitted poles would be areas of lesser importance. If funds remain available after first and second tier poles have been retrofitted, then the CPM may apply the remaining funds to other avian protection objectives outlined by the DRECP, in conjunction with BLM, USFWS, and CDFW. As an alternative to the Retrofitting Plan and the use of a CPM-approved third party, the total funding can be accomplished by making a payment in the amount of $300,000 to the National Fish and Wildlife Foundation's Bald and Golden Eagle Protection Act account.

2. Migratory Bird Conservation: The Project owner shall, prior to the commencement of commercial operation of the facility, provide funds for mitigation in one of two ways:

   a. Pay $1,500,000.00 to fund the activities of a CPM-approved third party or CEC that will perform additional migratory bird conservation

measures. Funds would be dispersed only with the release and approval of the CPM. The third party shall prepare and submit an annual report to the CPM and the project owner that provides an accounting of the funds spent, the activities performed, and the results of any studies, surveys, analysis, etc. performed with the funds. If the funds are managed by the CEC, the CEC shall prepare a report that provides an accounting of the funds spent, the activities performed, and the results of any studies, surveys, analysis, etc. performed with the funds and submit it to the project owner and shall post to the Energy Commission website.

3. Such measures shall be approved by the CPM and may include, but not be limited to: (i) restoration of degraded habitat with native vegetation; (ii) restoration of agricultural fields to bird habitat; (iii) management of agricultural fields to enhance bird populations; (iv) invasive plant species and artificial food or water source management; (v) control and cleanup of potential avian hazards, such as lead or microtrash; (vi) retrofitting of buildings to minimize collisions; (vii) retrofitting of conductors and above ground cables to minimize collisions; (viii) animal control programs; (ix) support for avian and bat research and/or management efforts conducted by entities approved by the CPM within the project's mitigation lands or other approved locations; (x) funding efforts to address avian diseases or depredation due to the expansion of predators in response to anthropomorphic subsidies that may adversely affect birds that use the mitigation lands or other approved locations; and (xi) contribute to the Migratory Bird Conservation Fund managed by the Migratory Bird Conservation Commission.

Verification: For power line retrofits:

1. At least six months prior to commercial operation, the project owner shall submit the draft Retrofit Plan to the CPM for review and approval and CDFW and USFWS for review and comment. At least 30 days prior to commercial operation, the project owner shall provide the CPM the final version of the Retrofit Plan. Any modifications to the approved Retrofit Plan must be approved by the CPM in consultation with USFWS, BLM, and CDFW. The project owner shall notify the CPM no less than five working days before implementing any CPM approved modifications to the Retrofit Plan.

2. If the project owner elects not to fund a third party to perform retrofits, then no less than 30 days prior to beginning commercial operations, the project owner shall provide written verification to the CPM that security has been established in the National Fish and Wildlife Foundation's Bald and Golden Eagle Protection Act account, in accordance with this condition of certification.

3. The project owner shall provide an annual summary of the actions taken, an accounting of money distributed, and a map of retrofitted power lines as per the Retrofit Plan. If the project owner elects to fund the National Fish and Wildlife Foundation's Bald and Golden Eagle Protection Act account, then the project owner

shall, provide an annual summary following the commencement of commercial operations specifying how the National Fish and Wildlife Foundation has or is using the funds.

For Migratory Bird Conservation:

1. No later than 30 days prior to commercial operation, the project owner shall provide the CPM written verification of deposit of $1,500,000.00 to the California EnergyCommission or the CPM-approved third party. If the funds are provided to the CEC, they shall be held by the Energy Commission in a special deposit fund that will be earmarked for use only for the purpose of mitigating impacts from this project.

2. Either the CEC or the CPM-approved third party shall prepare an annual report detailing a full accounting of the funds spent, the funds remaining in the account, the amount of interest earned, the recipient of any funds spent, the specific activities performed, and the results of any studies, surveys, analysis, etc. performed with the funds. If the funds are managed by the CPM-approved third party, the third party shall provide the report to the CPM and the project owner. If the funds are managed by the CEC, the report shall be provided to the project owner and posted to the CEC website.

AVIAN AND BAT PROTECTION PLAN

BIO-16b The Project owner shall prepare a Bird and Bat Conservation Strategy (BBCS) and submit it to the CPM for review and approval, in conjunction with BLM, CDFW, and USFWS for review and comment or, if available, shall implement a standard monitoring protocol as developed by the BLM, USFWS, CDFW, and Energy Commission staff. The BBCS, whether developed by the project owner or the regulatory agencies, shall provide for the following:

- Survey and monitor onsite and offsite avian use and behavior to document species composition on and offsite, compare onsite and offsite rates of avian and bat use, document changes in avian and bat use over time, and evaluate the general behavior of birds in and near the facility.
- Implement an onsite and offsite (if feasible) avian and bat mortality and injury monitoring program to identify the extent of potential avian or bat mortality or injury from collisions with facility structures or from elevated levels of solar flux that may be encountered within the facility airspace, including:
  - assessing levels of collision-related mortality and injury with heliostats, perimeter fences and power tower structures;
  - calculating rates of solar flux-related avian mortality and injury, if any;
  - documenting seasonal, temporal, and weather-related patterns associated with collision- or solar flux-related mortality and injury, if any; and
  - documenting flight spatial patterns that may be associated with collision- or flux-related mortality and injury, if any.

- documenting spatial patterns that may be associated with avoidance of the facility.

- Identify specific conservation measures and/or programs to minimize impacts and evaluate the effectiveness of those measures.
- Implement an adaptive management and decision-making framework for reviewing, characterizing, and responding to quantitative survey and monitoring results.

BBCS Components

The project owner shall prepare and implement a BBCS adopting all requirements applicable to solar generation in current guidelines recommended by the USFWS (currently 2012 USFWS Land Based Wind Energy Guidelines). The BBCS shall include the following components:

1. Preconstruction Baseline survey results. A description and summary of the baseline survey methods and results.

2. Formation of a technical advisory committee (TAC). The TAC will consist of a single representative of the BLM, CEC, CDFW, USFWS, one representative of the Project Owner involved in operation of the project and one representative of the Project Owner with environmental compliance responsibilities. The representatives of the Project Owner will not have voting rights on the TAC. The TAC will facilitate concurrent project owner, CPM, and state and federal wildlife agency review of seasonal and annual survey results development of a decision-framework for evaluating, the effectiveness of the adaptive management measures implemented by the project owner, modification of the surveys in response to the results, if necessary, and the identification of additional mitigation responses that are commensurate with the extent of impacts that may be identified in the monitoring studies. A meeting schedule for the TAC will be indentified, for regular review of avian and bat injury and mortality monitoring results, and recommend to the CPM for approval any necessary changes to monitoring, adaptive management, and appropriate dissemination of mitigation funds per BIO-16a #2. The TAC will also assist the CPM in implementing the following provisions #3 - #8 and the CPM will have the authority to require independent, third-party monitoring, if it determines that the project owner is not monitoring consistent with the approved BBCS and the project owner fails to timely cure such inconsistency after reasonable advance notice from the CPM.

3. Avian and bat use and behavior surveys. Avian and bat site-use behavior surveys shall be conducted during construction and operation. The program will outline survey methodology and field documentation, identification of appropriate onsite and offsite survey locations, control sites, and the seasonal considerations. Prey abundance surveys will also be conducted to identify the locations and changes in the abundance of prey species. Bat acoustic sampling may be implemented depending on results of the baseline study.

4. Golden eagle nest surveys and monitoring. Results of annual pedestrian and/or helicopter surveys of golden eagle nesting sites within a 10-mile radius of the project site, including a summary of available information concerning golden eagle nesting activity in the project vicinity.

5. Avian and bat mortality and injury monitoring: An avian and bat injury and mortality monitoring program shall be implemented during construction and operation of the project. The results of avian monitoring data shall be reported directly to the CPM and the project owner, as well as all raw data and field notes. Monitoring activities will include:

   (a) Onsite monitoring that will systematically survey representative locations within the facility, at a level that will produce statistically robust data; account for potential spatial bias and allow for the extrapolation of survey results to unsurveyed areas and the survey interval based on scavenger and searcher efficiency trials and detection rates.

   (b) Offsite monitoring, to the extent that access can be reasonably and feasibly obtained by the project owner, of one or more locations adjacent to the project facilities using the same or comparable methods as implemented for the onsite monitoring to identify which avian species potentially injured by collisions or solar flux within adjacent areas.

   (c) Low-visibility and high-wind weather event monitoring to document potential weather-related collision risks that may be associated with the power towers at the facility, including foggy, highly overcast, or rainy night-time weather typically associated with an advancing frontal system, and high wind events (40 miles per hour winds) are sustained for period of greater than 4 hours. The monitoring report shall include survey frequency, locations and methods.

   (d) Scavenger and searcher efficiency trials to document the extent to which avian or bat fatalities remain visible over time and can be detected within the project area and to adjust the survey timing and survey results to reflect scavenger and searcher efficiency rates.

   (e) Statistical methods used to generate facility estimates of potential avian and bat impacts based on the observed number of detections during standardized searches during the monitoring season for which the cause of death can be determined and is determined to be facility-related.

   (f) Field detection and mortality or injury identification, cause attribution, handling and reporting protocols consistent with applicable legal requirements.

6. Survey schedule and period. All surveys and monitoring studies included in the BBCS shall be conducted for at least three years following

commercial operation and approval of the BBCS by the CPM. At the end of the three-year period, the project owner, the TAC and the CPM shall meet and confer to determine whether the survey program shall be continued for subsequent periods. The monitoring program may be modified with the approval of the CPM in response to survey results, identified scavenging efficiency rates, or other factors to increase monitoring accuracy and reliability or in accordance with the adaptive management decision-making framework included in the BBCS. The individuals conducting the surveys and monitoring shall be available to the CPM or Energy Commission biological resources staff to answer questions on monitoring status, survey methods or the results of monitoring studies, and shall not be precluded from sharing their full and complete knowledge of the monitoring program, incidental observations, and results with the CPM or responsible Energy Commission staff.

7. Adaptive management. An adaptive management program shall be developed to identify and implement reasonable and feasible measures that would reduce any biologically significant levels of avian or bat mortality or injury attributable to project operations and facilities. Any such impact reduction measures must be commensurate (in terms of factors that include geographic scope, costs, and scale of effort) to the level of avian or bat mortality or injury that is specifically and clearly attributable to the project facilities. The adaptive management program shall include the following elements:

   (a) Reasonable measures for characterizing the extent and significance of detected mortality and injuries clearly attributable to the project and ensuring adequate funding for wildlife rehabilitation activities necessary for injuries clearly attributed to the project or wildlife found on site and approved by the CPM, in conjunction with the USFWS and CDFW. The Designated Biologist or Biological Monitors shall identify and photograph the injured or dead birds or bats in-situ, as well as a full-frame dorsal, ventral and head view using a camera with an automatic GPS and time/date stamp. The record(s) will be provided to the CPM in the monthly compliance report during construction and operation.

   (b) Measures that the project owner will implement to adaptively respond to detected mortality and injuries attributable to the project, including passive avian diverter installations along the perimeter or at other locations within the project to avoid site use, the use of sound, light or other means to discourage site use consistent with applicable legal requirements, onsite prey or habitat control measures consistent with applicable legal requirements, and additional perch and nest proofing of project facilities.

8. Eagle Protection Plan (EPP): The project owner shall prepare and implement an Eagle Protection Plan adopting all requirements applicable to solar generation as outlined in guidelines recommended by the USFWS (currently 2012 USFWS Land Based Wind Energy Guidelines2011b). The EPP may be prepared as a stand-alone document or included as a

chapter within the BBCS. The EPP shall describe all available baseline data on golden eagle occurrence, seasonality, activity, and behavior throughout the project area and vicinity. The EPP shall outline a study protocol consistent with Item 5 above to include annual pedestrian and/or helicopter surveys of golden eagle breeding sites within a 10 mile radius of the project site, to be reviewed and approved by the CPM, in consultation with the USFWS, BLM, and CDFW.

The EPP shall describe all proposed measures to prevent death and injury of eagles from (1) collisions with facility features including the heliostats, power towers, and gen-tie line towers or transmission lines, (2) electrocutions on transmission lines or other project components, and (3) concentrated solar flux created over the solar field. The EPP shall describe efforts taken pursuant to BIO-16a.

The EPP shall also include any feasible adaptive modifications to heliostat positioning during operation (including day time and night time) in order to minimize collisions and/or risk of exposure to concentrated solar flux. Any such adaptive minimization measures must be commensurate (in terms of factors that include geographic scope, costs, and scale of effort) to the level of avian or bat risk that is specifically and clearly attributable to the project facilities. The EPP shall provide a reporting schedule for all monitoring or other activities related to bird or bat conservation or protection during project construction or operation. The EPP shall be subject to review and approval by the CPM in consultation with CDFW, BLM, and USFWS, and shall be incorporated into the project's BRMIMP and BBCS, and implemented.

Verification: The BBCS (and EPP if submitted under separate cover) shall be submitted to the CPM for review and approval and to CDFW, BLM, and USFWS for review and comment no less than 60 days after start of construction. The project owner shall provide the CPM with copies of any written or electronic transmittal from the USFWS, BLM, or CDFW related to the BBCS within 30 days of receiving any such transmittal. Survey reports shall be submitted to the CPM after each season and in an annual summary report throughout the course of the three-year study period and as set forth in the approved monitoring study plan. The reports will include all monitoring data required as part of the monitoring program, such as photographs, GPS locations, observations, and other information required by the CPM.

Methods and results of the Monitoring Study shall be submitted to the CPM in Monthly and Annual Compliance Reports throughout the course of the study, or as otherwise directed by the CPM. Mortality or injuries of special status species shall be reported to the CPM via phone and email within one working day of discovery. The Monitoring Study shall continue until the CPM, in consultation with CDFW, BLM, and USFWS, concludes that the cumulative monitoring data provide sufficient basis for estimating long-term bird mortality for the project. The reports will include all monitoring data required as part of the monitoring program.

The reports shall also summarize any additional wildlife mortality or injury documented on the project site during the year, regardless of cause, and assess any adaptive management measure implemented during the prior year as approved by the CPM.

After the third year of the monitoring program, the CPM shall meet and confer with the TAC to determine if the study period shall be extended based on data quality and sufficiency of analysis, or if needed, to document efficacy of any adaptive management measures undertaken by the project owner. If a carcass of a golden eagle or any state or federally listed threatened or endangered species is found at any time by the monitoring study or project operations staff, the project owner, Designated Biologist, or other qualified biologist that may be identified by the Designated Biologist shall contact the CPM, CDFW and USFWS by email, fax or other electronic means within one working day of any such detection.

AMERICAN BADGER AND DESERT KIT FOX IMPACT AVOIDANCE AND MINIMIZATION MEASURES

BIO-17 The project owner shall contract a qualified biologist to conduct a baseline pre-construction desert kit fox and American badger survey and develop and implement an American Badger and Desert Kit Fox Mitigation and Monitoring Plan (Plan). The survey data will be used to revise the final Plan, as necessary, with the most recent species data from the project site.

The project owner shall conduct a baseline kit fox survey and submit a summary report that includes the following procedures:

1. A qualified biologist with demonstrated mammal experience shall complete a baseline pre-construction survey of desert kit fox and American badger populations on the project site and the anticipated dispersal areas for passive relocation between 30 and 60 days prior to initiation of any ground disturbing activities, including site mobilization and construction activities that include installation of desert tortoise fencing. The anticipated dispersal areas shall be defined as all suitable desert kit fox habitat within 500 meters of the project boundaries where desert kit fox would likely be displaced. The survey shall identify and record the locations of all potential dens throughout the project site (or phase) and shall characterize the approximate number and distribution of the badger and kit foxes on the site and anticipated dispersal areas. Depending on the season of the surveys (i.e. breeding or non-breeding) other demographic data will be collected if possible to determine. The baseline pre-construction survey shall include the following components:

    a. An inventory and mapped locations of desert kit fox dens and burrows on the project site (including all project disturbance areas) and in the anticipated dispersal areas, and an evaluation whether each burrow is occupied, and reproductive status of kit foxes (single animal, mated pair, or family group with young), if known. If status unknown measures as required under Item 2b, below, will be implemented.

    b. Reporting: The project owner shall provide a draft Summary Report of the Baseline American Badger and Desert Kit Fox Survey to the CPM and BLM for review in consultation with CDFW. The project owner and the project owner's Designated Biologist shall consult with the CPM

and BLM on any changes to the final Plan that would result from the baseline pre-construction survey data provided in the Summary Report. The project owner shall not implement the American Badger and Desert Kit Fox Mitigation and Monitoring Plan (below) until receiving the CPM and BLM's written approval of the final Plan.

The objective of the plan shall be to avoid direct impacts to the American badger and desert kit fox as a result of site mobilization and construction of the power plant and linear facilities, as well as during project operation and non-operation and closure. The final plan is subject to review and comment by BLM and revision and approval by the CPM, in consultation with California Department of Fish and Wildlife (CDFW). The final Plan shall include, but is not limited to, the following procedures and impact avoidance measures:

2. Describe pre-construction survey and clearance field protocol, to determine the number and locations of single or paired kit foxes or badgers on the project site that would need to be avoided or passively relocated and the number and locations of desert kit fox or badger burrows or burrow complexes that would need to be collapsed to prevent re-occupancy by the animals.

   a. Pre-Construction Surveys. A baseline, preconstruction survey shall be conducted as described above under Item 1. Surveys may be concurrent with desert tortoise and burrowing owl surveys to the extent it does not conflict with desert tortoise and burrowing owl agency protocols. Depending on the timing of the project phases and time between phases, surveys may need to be conducted for each phase of construction Options for timing of surveys shall be detailed in the Plan. If dens are detected during the survey(s), each den shall be classified as inactive, potentially active, definitely active den, or natal den.

   b. Monitoring and Protection Measures, Passive Hazing, and Den Excavation: The plan will include details on monitoring requirements, types and methods of passive hazing, and methods and timing of den excavation, including, but not limited to the following:

      i. Inactive dens. Inactive dens (e.g. inactive dens are dens that are mostly or entirely silted in and ones in which the back of the den can clearly be seen (e.g., the den isn't deep and doesn't curve) that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badger or kit fox.

      ii. Potentially and definitely active dens. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the

target species are captured after three nights, the den shall be excavated and backfilled by hand. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den. If the den is proven inactive then den may be collapsed during whelping season. BLM approval may be required prior to release of badgers on public lands.

iii. Active natal/pupping dens. If an active natal den (a den with pups) is detected on the site, the project owner shall proceed to implement the approved Plan and shall also notify the BLM, CPM, and CDFW within 24 hours. If the situation is unusual and/or not addressed by the approved Plan, then the project owner's biologist shall consult with the CPM,BLM, and CDFW to determine the appropriate course of action to minimize the potential for animal harm or mortality. The course of action would depend on the age of the pups, location of the den on the site (e.g. is the den in a central area or in a perimeter location), status of the perimeter site fence (completed or not), and the pending construction activities proposed near the den. A 500-foot no-disturbance buffer shall be maintained around all active dens. The denning season for American badger is approximately March to August, and for desert kit fox the denning season is approximately Mid-January to pup independence typically by July 1 (or with confirmation of pup independence based on monitoring data). If the den is active during the whelping season, even if pups are not seen, disturbance is not allowed. Active natal/pupping dens will not be excavated or passively relocated.

c. Exception for American badger. In the event that passive relocation techniques fail for badgers, outside the denning season, or during the denning season if individual badgers can be verified to not have a litter, then live-trapping by a CDFW and CPM approved trapper is an option that may be employed to safely perform active removal as a last resort. A live-trapping plan including trapping methods as well as the name and resume, including documentation of relevant handling permits of the proposed trapper, would be included in detail as part of the approved Plan. In the event live-trapping would be employed as a last resort, written notification would be submitted to the CPM for review and approval in consultation with BLM and CDFW. The CPM, BLM and CDFW would be notified in writing no less than 1 week prior to live trapping of badger. The notification would at a minimum include what passive relocation methods have been attempted to date and the justification for live-trapping as a last resort. In addition timing, and location of release of the individual badger as well as the name of the

proposed trapper and resume, including documentation of relevant handling permits if not previously included and approved in the Plan shall be included in the notification. BLM approval may be required prior to release of badgers on public lands.

3. Address other factors and procedures that may affect the success of kit fox and American badger relocation offsite, such as:

   a. Qualitative discussion of availability of suitable habitat on off-site surrounding lands within 10 miles of the project boundary, and evaluation of kit fox burrows with 500 meters of the project boundary, in areas where onsite foxes may disperse (e.g., by inventorying burrow numbers in selected representative sample areas) as identified in the pre-construction surveys above;

   b. Estimates of the distances kit foxes would need to travel across the project site and across adjacent lands to safely access suitable habitat (including burrows) off-site;

   c. Proposed scheduling of the passive relocation effort;

   d. Methods to minimize likelihood that the animals will return to the project site;

   e. Descriptions of any proposed or potential ground disturbing activities related to kit fox relocation, and locations of those activities (e.g., artificial burrow construction);

   f. A monitoring and reporting plan to evaluate success of the relocation efforts and any subsequent re-occupation of the project site; and

   g. A plan to subsequently relocate any animals that may return to the site (e.g., by digging beneath fences).

4. Address notification procedures for notifying the CPM, BLM and CDFW if injured, sick, or dead badger or kit fox are detected. Notify the CPM, BLM and CDFW if injured, sick, or dead American badger and desert kit fox are found. If an injured, sick, or dead animal is detected on any area associated with the solar project site or associated linear facilities, the CPM, BLM Palm Springs/ South Coast Field Office and the Ontario CDFW Office as well as the CDFW Wildlife Investigation Lab (WIL) shall be notified immediately by phone (8 hours in the case of a fatality). Written follow-up notification via FAX or electronic communication shall be submitted to the CPM, BLM and CDFW within 24 hours of the incident and shall include the following information as appropriate:

   a. Injured animals. If an American badger or desert kit fox is injured because of any project-related activities, the Designated Biologist or approved Biological Monitor shall immediately notify the CPM, BLM and CDFW personnel regarding the capture and transport of the animal to CDFW-approved wildlife rehabilitation and/or veterinarian

clinic. Following the phone notification, the CPM and CDFW shall determine the final disposition of the injured animal, if it recovers. A written notification of the incident shall be sent to the CPM, BLM and CDFW containing, at a minimum, the date, time, location, and circumstances of the incident.

b. Sick animals. If an American badger or desert kit fox is found sick and incapacitated on any area associated with the project site or associated linear facilities, the Designated Biologist or approved Biological Monitor shall immediately notify the CPM, BLM and CDFW personnel for immediate capture and transport of the animal to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Following the phone notification, the CPM and CDFW shall determine the final disposition of the sick animal, if it recovers. A necropsy shall be performed by a CDFW-approved facility to determine the cause of death. The project owner shall pay to have the animal transported and a necropsy performed. A written notification of the incident shall be sent to the CPM, BLM and CDFW and contain, at a minimum, the date, time, location, and circumstances of the incident.

c. Fatalities. If an American badger or desert kit fox is killed because of any project-related activities during construction, operation, and closure or is found dead on the project site or along associated linear facilities, the Designated Biologist or approved Biological Monitor shall immediately refrigerate the carcass and notify the CPM, BLM and CDFW personnel within 24 hours (8 hours in the case of desert kit fox) of the discovery to receive further instructions on the handling of the animal. Handling of a dead kit fox shall follow the most recently issued Guidelines for Handling a Desert Kit Fox Carcass (currently CDFW WIL 2011) or. A necropsy shall be performed by a CDFW-approved facility to determine the cause of death. The project owner shall pay to have the animal transported and a necropsy performed.

5. Additional protection measures to be included in the Plan and implemented:

a. All pipes within the project disturbance area must be capped and/or covered every evening or when not in use to prevent desert kit foxes or other animals from accessing the pipes.

b. All project-related water sources shall be covered and secured when not in use to prevent drowning.

c. The project owner shall coordinate with CDFW to identify any additional fence design features to maximize the effectiveness of the fence to exclude kit foxes from the project.

d. Incorporate and implement the CDFW Veterinarian's guidance regarding impact avoidance measures including measures to prevent disease spread among desert kit foxes.

e. Include measures to reduce traffic impacts to wildlife if the project owner anticipates night-time construction. The plan must also include a discussion of what information will be provided to all night-time workers, including truck drivers, to educate them about the threats to kit fox, what they need to do to avoid impacts to kit fox, and what to report if they see a live, injured, or dead kit fox.

f. In order to reduce the likelihood of distemper transmission:

i. No pets shall be allowed on the site prior to or during site mobilization and construction, operation, and non-operation and closure, with the possible exception of vaccinated kit fox scat detection dogs during preconstruction surveys, and then only with prior CPM and CDFW approval;

ii. Any hazing activities that include the use of chemical or other repellents (e.g. ultrasonic noise makers, or non-animal-based chemical repellents) must be cleared through the CPM and CDFW prior to use. The use of animal tissue or excretion based repellents (e.g. coyote urine, anal gland products) is not permitted.

iii. Any sick or diseased kit fox, or documented kit fox mortality shall be reported to the CPM, CDFW, and the BLM immediately upon identification (within 8 hours for mortality). If a dead kit fox is observed, it shall be collected and stored according to established protocols distributed by CDFW WIL, and the WIL shall be contacted to determine carcass suitability for necropsy.

6. The project owner may opt to participate in the CDFW-led fee-based Monitoring and Mitigation Program if in place prior to start of site mobilization and construction in lieu of implementation of certain items in above 3f, 4b, 4c, 5d, 5f and other items above if included in the program when established. This includes financial responsibility for transportation and necropsy of desert kit fox mortalities due to project-related activities or sick animals found on or near the project site or associated linears as well as measures to address other factors and procedures that may affect the success of kit fox and American badger relocation offsite. If in place, the CDFW Monitoring and Mitigation Program activities associated with the Project and associated fees will be fully described in the final Plan. The project owner may also opt to participate in the program if established at a later date during site mobilization and construction or operation and will submit a revised Plan that includes the program information when established and confirmation that fees are paid.

Verification: No fewer than 90 days prior to the start of any site mobilization and construction the project owner shall provide the CPM, BLM, and CDFW with a draft American Badger and Desert Kit Fox Mitigation and Monitoring Plan for review and comment.

Between 30 to 60 days prior to initiation of site mobilization and construction activities, a qualified biologist with demonstrated mammal experience shall complete a baseline study of American badger and desert kit fox populations on the project site and the anticipated dispersal areas for passive relocation.

The Project owner shall submit a summary report to the CPM, BLM and CDFW within 7 days of completion of any badger and kit fox surveys. The report shall describe survey methods and results of the surveys. The project owner and the Designated Biologist shall consult with the CPM and BLM upon submitting the summary report regarding any changes to the final Plan.

No fewer than 15 days prior to start of any site mobilization and construction, the project owner shall provide an electronic copy of the CPM-approved final Plan to the CPM, BLM and CDFW and implement the Plan.

No later than 24 hours following a phone notification of an injured, sick, or dead American badger or desert kit fox, the project owner shall provide to the CPM, BLM and CDFW, via FAX or electronic communication, a written report from the Designated Biologist describing the incident of sickness, injury, or death of an American badger or desert kit fox, when the incident occurred, and who else was notified.

Beginning with the first month after start of construction and continuing every month until construction is completed, the Designated Biologist shall include a summary of events regarding the American badger and desert kit fox in each Monthly Compliance Reports (MCR). The impact avoidance and minimization measure(s) implemented and the results of implementation of those measures shall be reported in each MCR.

No later than 45 days after initiation of project operation, the Designated Biologist shall provide the CPM and BLM a final American Badger and Desert Kit Fox Mitigation and Monitoring Plan Report that includes: 1) a discussion of all mitigation measures that were and currently are being implemented; 2) all information about project-related kit fox and badger injuries and/or deaths; 3) all information regarding sick kit fox and badger found within the project site and along related linear facilities; and 4) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future projects on the American badger and desert kit fox.

Within 30 days of participation in the CDFW-led fee-based Monitoring and Mitigation Program during site mobilization and construction or operation, the project owner will submit a revised Plan that includes the program information related to the project and confirmation that all fees are paid.

BURROWING OWL IMPACT AVOIDANCE, MINIMIZATION, AND COMPENSATION MEASURES

BIO-18 The Project owner shall implement the following measures to avoid, minimize and offset impacts to burrowing owls:

1. Pre-Construction Surveys. The Designated Biologist or Biological Monitor shall conduct pre-construction surveys for burrowing owls no more than 30 days prior to initiation of site mobilization and construction activities in

accordance with CDFW guidelines (CDFW 2012). Surveys shall be focused exclusively on detecting burrowing owls, and shall be conducted from two hours before sunset to 1 hour after or from 1 hour before to 2 hours after sunrise. The survey area shall include the Project Disturbance Area and surrounding 500 foot survey buffer for each phase of construction in accordance with **BIO-29** (phasing).

2. Implement Burrowing Owl Mitigation Plan. The Project owner shall implement measures described in the final Burrowing Owl Mitigation Plan. The final Burrowing Owl Mitigation Plan shall be approved by the CPM, in consultation with BLM, USFWS and CDFW, and shall:

   a. identify suitable sites within 1 mile of the Project Disturbance Areas for creation or enhancement of burrows prior to passive relocation efforts;

   b. provide guidelines for creation or enhancement of at least two natural or artificial burrows per relocated owl; design of the artificial burrows shall be consistent with CDFW guidelines (CDFW 2012) and shall be approved by the CPM in consultation with CDFW and USFWS;

   c. provide detailed methods and guidance for passive relocation of burrowing owls occurring within the Project Disturbance Area; and

   d. describe monitoring and management of the passive relocation effort, including the created or enhanced burrow location and the project area where burrowing owls were relocated from, and provide a reporting plan.

3. Implement Avoidance Measures. If an active burrowing owl burrow is detected within 500 feet from the Project Disturbance Area the following avoidance and minimization measures shall be implemented:

   a. Establish Non-Disturbance Buffer. Fencing shall be installed at a 250-foot radius from the occupied burrow to create a non-disturbance buffer around the burrow. The non-disturbance buffer and fence line may be reduced to 160 feet if all Project-related activities that might disturb burrowing owls would be conducted during the non-breeding season (September 1 through January 31). Signs shall be posted in English and Spanish at the fence line indicating no entry or disturbance is permitted within the fenced buffer.

   b. Monitoring: If construction activities would occur within 500 feet of the occupied burrow during the nesting season (February 1 – August 31) the Designated Biologist or Biological Monitor shall monitor to determine if these activities have potential to adversely affect nesting efforts, and shall make recommendations to minimize or avoid such disturbance.

4. Acquire Burrowing Owl Habitat. The Project owner shall acquire, in fee or in easement land suitable to support a resident population of burrowing owls and shall provide funding for the enhancement and long-term

management of these compensation lands. The responsibilities for acquisition and management of the compensation lands may be delegated by written agreement to CDFW or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the CPM, in consultation with CDFW and USFWS prior to land acquisition or management activities. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat.

a. Criteria for Burrowing Owl Mitigation Lands. The terms and conditions of this acquisition or easement shall be as described in **BIO-12** [Desert Tortoise Compensatory Mitigation], with the additional criteria to include: 1) mitigation land per **BIO-29 - Table 2** that must provide suitable habitat for burrowing owls, and 2) the acquisition lands must either currently support burrowing owls or be within dispersal distance from areas occupied by burrowing owls (generally approximately five miles).The burrowing owl mitigation lands may be included with the desert tortoise mitigation lands ONLY if these two burrowing owl criteria are met. If the burrowing owl mitigation land is separate from the acreage required for desert tortoise compensation lands, the Project owner shall fulfill the requirements described below in this condition.

b. Security. If the burrowing owl mitigation land is separate from the acreage required for desert tortoise compensation lands the Project owner or an approved third party shall complete acquisition of the proposed compensation lands within the time period specified for this acquisition (see the verification section at the end of this condition). Alternatively, financial assurance can be provided by the Project owner to the CPM and CDFW, according to the measures outlined in **BIO-12**. The amount of the Security shall be as described in **BIO-29 – Table 3** for the proposed Project or any of the Project alternatives. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") prior to initiating ground-disturbing Project activities. Prior to submittal to the CPM, the Security shall be approved by the CPM, in consultation with CDFW and the USFWS to ensure funding. The final amount due will be determined by an updated appraisal and PAR analysis conducted as described in **BIO-12**.

Verification: If pre-construction surveys detect burrowing owls within the Project Disturbance Area and relocation of the owls is required, within 30 days of completion of the burrowing owl pre-construction surveys the Project owner shall submit to the CPM, BLM, CDFW, and USFWS a Burrowing Owl Mitigation Plan. The Burrowing Owl Mitigation Plan shall identify suitable areas for construction of burrows and the other passive relocation as described above. As part of the Annual Compliance Report each year following construction for a period of five years, the Designated Biologist shall provide a report to the CPM, BLM, USFWS and CDFW that describes the results of

monitoring and management of the burrowing owl burrow creation or enhancement area(s).

If pre-construction surveys detect burrowing owls within 500 feet of proposed construction activities, at least 10 days prior to the start of any Project-related site disturbance activities the Designated Biologist shall provide to the CPM, BLM, CDFW, and USFWS documentation indicating that non-disturbance buffer fencing has been installed as described above. The Project owner shall report monthly to the CPM, BLM, CDFW and USFWS for the duration of construction on the implementation of burrowing owl avoidance and minimization measures. Within 30 days after completion of construction the Project owner shall provide to the CPM and CDFW a written report identifying how mitigation measures described in the plan have been completed.

No less than 30 days prior to the start of site mobilization and construction-activities the Project owner shall provide the CPM with an approved form of Security in accordance with this condition of certification. Actual Security for acquisition of 78 acres of burrowing owl habitat shall be provided no later than 7 days prior to the beginning of site mobilization and construction activities.

No fewer than 90 days prior to the land or easement purchase, as determined by the date on the title, the Project owner shall provide the CPM with a management plan for review and approval, in consultation with CDFW, BLM, and USFWS, for the compensation lands and associated funds.

No later than 18 months from initiation of construction, the Project owner shall provide written verification to the CPM that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient.

SPECIAL-STATUS PLANT IMPACT AVOIDANCE, MINIMIZATION AND COMPENSATION

BIO-19 This condition contains the following four sections:

- **Section A: Special-Status Plant Impact Avoidance and Minimization Measures** contains the Best Management Practices and other measures designed to avoid accidental indirect impacts to plants during site mobilization, construction, operation, and closure. The measures are required for special-status plants located outside of the Project Disturbance Area and within 100 feet of the Project Disturbance Area. The same measures shall also be implemented for plants within the Project Disturbance Area that are avoided pursuant to Section C of this condition.
- **Section B: Conduct Late Season Botanical Surveys** describes guidelines for conducting summer-fall 2013 surveys to detect special-status plants that would have been missed during the spring 2013 surveys.
- **Section C: Avoidance Requirements for Special-Status Plants** Detected **in the Summer/Fall 2013 Surveys** outlines the level of on-site avoidance required for any special-status plants detected during the summer-fall surveys, and specifies when off-site mitigation is required..

- **Section D: Off-Site Compensatory Mitigation for Special-Status Plants** describes performance standards for off-site mitigation through acquisition or restoration/enhancement.

"Project Disturbance Area" encompasses all areas to be temporarily and permanently disturbed by the Project, including the plant site, linear facilities, and areas disturbed by temporary access roads, fence installation, construction work lay-down and staging areas, parking, storage, or by any other activities resulting in disturbance to soil or vegetation. The term "Permanent Project Disturbance Area" refers only to the solar facility; "linears" includes transmission lines, laydown areas, pipelines, and access roads.

The Project owner shall implement the following measures in Section A, B, C, and D to avoid, minimize, and compensate for direct, indirect, and cumulative impacts to special-status plant species:

Section A: Special-Status Plant Impact Avoidance and Minimization Measures

To protect all special-status plants[23]located outside of the Project Disturbance Area and within 100 feet of the permitted Project Disturbance Area from accidental and indirect impacts during site mobilization construction, operation, and closure, the Project owner shall implement the following measures:

1. Designated Botanist. An experienced botanist who meets the qualifications described in Section B-2 below shall oversee compliance with all special-status plant avoidance, minimization, and compensation measures described in this condition throughout construction and closure. The Designated Botanist shall oversee and train all other Biological Monitors tasked with conducting botanical survey and monitoring work. During operation of the Project, the Designated Biologist shall be responsible for protecting special-status plant occurrences within 100 feet of the Project boundaries.

2. Special-Status Plant Impact Avoidance and Minimization Measures. The Project owner shall incorporate all measures for protecting special-status plants in close proximity to the site into the BRMIMP (**BIO-7**). These measures shall include the following elements:

[2] This shall include special-status plants found during the fall 2010 surveys and the following species found during the spring 2009-2010 surveys: Harwood's milk-vetch; Harwood's woolly-star; California ditaxis; ribbed cryptantha, and the "Palen Lake atriplex (Andre sp. nov.).

[3] Staff defines special-status plants as described in *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* (California Natural Resources Agency, Department of Fish and Game, issued November 24, 2009). "List 3 plants may be analyzed under CEQA §15380 if sufficient information is available to assess potential impacts to such plants. Factors such as regional rarity vs. statewide rarity should be considered in determining whether cumulative impacts to a List 4 plant are significant even if individual project impacts are not."

a. Site Design Modifications: i) Incorporate s modifications to site design or construction techniques to minimize direct and indirect impacts to special-status plants along the Project linears to include: limiting the width of the work area; adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads to preserve the seed bank, and minor adjustments to the alignment of the roads and pipelines within the constraints of the ROW; ii) These modifications shall be clearly depicted on the grading and construction plans, and on report-sized maps in the BRMIMP.

b. Establish Environmentally Sensitive Areas (ESAs). Prior to the start of any ground- or vegetation-disturbing activities, the Designated Botanist shall establish ESAs to protect avoided[4] special-status plants located outside of the Project Disturbance Areas and within 100 feet of the boundary of construction. This includes plant occurrences identified during the all spring and late season surveys previously conducted. The locations of ESAs shall be clearly depicted on construction drawings, which shall also include all avoidance and minimization measures on the margins of the construction plans. The boundaries of the ESAs shall be placed a minimum of 20 feet from the uphill side of the occurrence and 10 feet from the downhill side. Where this is not possible due to construction constraints, other protection measures such as silt-fencing and sediment controls may be employed to protect the occurrences. Equipment and vehicle maintenance areas, and wash areas, shall be located 100 feet from the uphill side of any ESAs. ESAs shall be clearly delineated in the field with temporary construction fencing and signs prohibiting movement of the fencing or sediment controls under penalty of work stoppages and additional compensatory mitigation. ESAs shall also be clearly identified (with signage or by mapping on site plans) to ensure that avoided plants are not inadvertently harmed during construction, operation, or closure.

c. Special-Status Plant Worker Environmental Awareness Program (WEAP). The WEAP **(BIO-6)** shall include training components specific to protection of special-status plants as outlined in this condition.

d. Herbicide and Soil Stabilizer Drift Control Measures. Special-status plant occurrences within 100 feet of the Project Disturbance Area, and any occurrences avoided within the Project Disturbance Area[3] shall be protected from herbicide and soil stabilizer drift. The Weed Management Plan (**BIO-14**) shall include measures to avoid chemical drift or residual toxicity to special-status plants consistent with guidelines such as those provided by the Nature Conservancy's *The*

[4] "Avoided" includes plants occurring within 100 feet outside of the Project boundary, and all plants within the Project Disturbance Area (linears or solar facility) that were avoided pursuant to Section C of this condition.

Global Invasive Species Team[5] , the U.S. Environmental Protection Agency, and the Pesticide Action Network Database[6].

e. Erosion and Sediment Control Measures. Erosion and sediment control measures shall not inadvertently impact special-status plants by using invasive or non-native plants in seed mixes, introducing pest plants through contaminated seed or straw, accidental burial by mulches, etc. These specifications shall be incorporated in the Drainage, Erosion, and Sedimentation Control Plan required under **SOIL&WATER-1**.

f. Locate Staging, Parking, Spoils, and Storage Areas Away from Special-Status Plant Occurrences. Areas for spoils, equipment, vehicles, and materials storage areas; parking; equipment and vehicle maintenance areas, and wash areas shall be placed at least 100 feet from any ESAs. These specifications shall be incorporated in the Drainage, Erosion, and Sedimentation Control Plan required under **SOIL&WATER-1**.

g. Pre-Construction Seed Collection. For all significant impacts to special-status plants, mitigation shall include seed collection from the affected special-status plants population on-site prior to construction to conserve the germplasm and provide a seed source for restoration efforts. Seed collection shall follow the guidelines described in Section D.III.3 of this condition.

h. Monitoring and Reporting Requirements. The Designated Botanist, or Biological Monitor under supervision of the Designated Botanist, shall conduct weekly monitoring of the ESAs that protect special-status plant occurrences during construction and closure activities.

Section B: Conduct Late-Season Botanical Surveys

The Project owner shall conduct late-summer/fall botanical surveys for late-season special-status plants prior to start of construction or by the end of 2013, as described below:

1. Survey Timing. Surveys shall be timed to detect: a) summer annuals triggered to germinate by the warm, tropical summer storms (which may occur any time between June and October), and b) fall-blooming perennials that respond to the cooler, later season storms (typically beginning in September or October). For those species that are identified by vegetative characteristics, surveys do not have to be timed for blooming or fruiting. The surveys shall not be timed to coincide with the

[5] Hillmer, J. & D. Liedtke. 2003. Safe herbicide handling: a guide for land stewards and volunteer stewards. Ohio Chapter, The Nature Conservancy, Dublin, OH. 20 pp. Online: <http://www.invasive.org/gist/products.html.

[6] Pesticide Action Network of North America. Kegley, S.E., Hill, B.R., Orme S., Choi A.H., PAN Pesticide Database, Pesticide Action Network, North America. San Francisco, CA, 2010 <http://www.pesticideinfo.org>

statistical peak bloom period of the target species but shall instead, if possible, be based on plant phenology and the timing of a significant storm event (e. g., a 10mm or greater rain or multiple storm events of sufficient volume to trigger germination as determined by a qualified botanist.). If possible, surveys shall occur at the appropriate time to capture the characteristics necessary to identify the taxon. Construction is authorized to commence following a 2013 late season survey.

2. Surveyor Qualifications and Training. Surveys shall be conducted by a qualified botanist knowledgeable in the complex biology of the local flora, and consistent with CDFG (2009) and BLM (2009) guidelines for surveyor qualifications. Each surveyor shall be equipped with a GPS unit and record a complete tracklog; these data shall be compiled and submitted along with the Summer-Fall Survey Botanical Report (described below). Prior to the start of surveys, all crew members shall, at a minimum, visit reference sites (where available) and/or review herbarium specimens of all BLM Sensitive plants, California Rare Plant Rank (RPR) 1B or 2 (Nature Serve rank S1 and S2) or proposed RPR 1B or 2 taxa, and any new reported or documented taxa, to obtain a search image. Because the potential for range extensions is unknown, the list of potentially occurring special-status plants shall include all special-status taxa known to occur within the Sonoran Desert region and the eastern portion of the Mojave in California. The list shall also include taxa with bloom seasons that begin in fall and extend into the early spring as many of these are reported to be easier to detect in fall, following the start of the fall rains.

3. Survey Coverage. The survey coverage or intensity shall be in accordance with most recent BLM Survey Protocols (currently issued July 2009)[7], which specify that intuitive controlled surveys shall only be accomplished by botanists familiar with the habitats and species that may reasonably be expected to occur in the project area.

4. Pre-Construction Seed Collection. For all significant impacts to special-status plants, mitigation shall include seed collection from the affected special-status plants population on-site prior to construction to conserve the germplasm and provide a seed source for restoration efforts. Seed collection shall be conducted during the late-season surveys follow the guidelines described in Section D.III.3 of this condition.

5. Documenting Occurrences. If a special-status plant is detected, the full extent of the population onsite shall be recorded using GPS in accordance with BLM survey protocols. Additionally, the extent of the population within one mile of Project boundaries shall be assessed at least qualitatively to facilitate an accurate estimation of the proportion of the population affected by the Project. For populations that are very dense or very large, the population size may be estimated by simple sampling techniques.

[7] Bureau of Land Management (BLM), California State Office. *Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species*. Issued July 2009.

When populations are very extensive or locally abundant, the surveyor must provide some basis for this assertion and roughly map the extent on a topographic map. All but the smallest populations (e.g., a population occupying less than 100 square feet) shall be recorded as area polygons; the smallest populations may be recorded as point features. All GPS-recorded occurrences shall include: the number of plants, phenology, observed threats (e.g., OHV or invasive exotics), and habitat or community type. The map of occurrences submitted with the final botanical report shall be prepared to ensure consistency with definition of an occurrence by CNDDB, i.e., occurrences found within 0.25 miles of another occurrence of the same taxon, and not separated by significant habitat discontinuities, shall be combined into a single 'occurrence'. The Project owner shall also submit the raw GPS shape files and metadata, and completed CNDDB forms for each 'occurrence' (as defined by CNDDB).

6. Reporting. Raw GPS data, metadata, and CNDDB field forms shall be provided to the CPM and the BLM State Botanist within four weeks of the completion of each survey. If surveys are split into two or more periods (e.g., a late summer survey and a fall survey), then a summary letter shall be submitted following each survey period.

   The Final Summer-Fall Botanical Survey Report shall be prepared consistent with CDFW guidelines (currently CDFG 2009), and currently BLM 2009 guidelines (or the most recent version of CDFW and BLM guidelines) and shall include all of the following components:

   a. the BLM designation, NatureServe Global and State Rank of each species or taxon found (or proposed rank, or CNPS List);

   b. the number or percent of the occurrence that will be directly affected, and indirectly affected by changes in drainage patterns or altered geomorphic processes;

   c. the habitat or plant community that supports the occurrence and the total acres of that habitat or community type that occurs in the Project Disturbance Area;

   d. an indication of whether the occurrence has any local or regional significance (e.g., if it exhibits any unusual morphology, occurs at the periphery of its range in California, represents a significant range extension or disjunct occurrence, or occurs in an atypical habitat or substrate);

   e. a completed CNDDB field form for every occurrence (occurrences of the same species within one-quarter mile or less of each other combined as one occurrence, consistent with CNDDB methodology), and

f. two maps: one that depicts the raw GPS data (as collected in the field) on a topographic base map with Project features; and a second map that follows the CNDDB protocol for occurrence mapping.

Section C: Avoidance Requirements for Special-Status Plants Detected in the Summer/Fall 2013 Surveys

The Project owner shall apply the following avoidance and mitigation standards for impacts to late blooming special-status plants that might be detected during late summer/fall season surveys. The Project owner shall immediately notify the CDFW, USFWS, BLM State Botanist, and the CPM if any State- or Federal-listed species or BLM Sensitive species are detected. Avoidance and/or the off-site mitigation measures described in Section D below would reduce impacts to these special-status plant species to less-than-significant levels. Plants shall be considered impacted if they are within the Project footprint, or if they would be affected by Project-related hydrologic changes or changes to the local sand transport system Downstream/ downwind impacts from altered hydrology or geomorphic processes shall be considered direct impacts.

Mitigation for CNDDB State Rank 1 Plants (Critically Imperiled). If late blooming species with a CNDDB State rank (S rank) of 1[8] are detected within the Project Disturbance Area, complete avoidance is mandatory along the linears and within construction laydown areas. The Project owner shall limit the width of the work area; adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads, and other construction or design modifications as necessary to achieve avoidance of any Rank 1 plants detected.

If late-season State Rank (S) 1 plants are detected on the solar facility, the Project owner shall avoid all plants around the perimeter[9] of the facility as necessary to achieve 75 percent avoidance of the local population of the affected species. The local population shall be measured by the number of individuals occurring on the Project Site and within the immediate watershed of the Project for wash dependent-species or species of unknown dispersal mechanism, or within the local sand transport corridor for wind dispersed species. Measurement of percent avoidance shall be based on population for perennials and on habitat for annuals (habitat containing the species' micro-habitat preferences, such as "fine silts and moist depressions"). Avoidance

[8] The CNDDB State Rank is provided in the California Natural Diversity Database (CNDDB) is a Natural Heritage rank that is generated using a rank calculator from the Heritage program, and in California this ranking process is managed by CNDDB and refers to the imperilment status only within California's state boundaries. Plants with a Rank of 1 are "Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state."

[9] The inside "perimeter" is used here to describe the distance or length equal to two troughs.

within the central portion of the solar facility is not recommended because it would create fragmented conditions that would not sustain persistence of the affected species. For all portions of the local population not avoided, the Project owner shall implement off-site mitigation at a ratio of 3:1. The off-site mitigation may include land acquisition or implementation of a restoration/enhancement program for the species, and shall meet the performance standards described in section D of this Condition. The Applicant must demonstrate, subject to review and approval by the CPM, that the impacts, after mitigation, will not cause a loss of viability[10] for that species. The Project owner shall prepare and implement a Special-Status Plant Mitigation Plan (Plan). The content of the Plan and definitions shall be as described above in subsection C.3, below.

1. Mitigation for CNDDB State Rank 2[11] Plants (Imperiled). If late-season CNDDB State Rank (S) 2 species are detected within the Project Disturbance Area avoidance is mandatory along the linears unless such avoidance would cause disturbance to areas not previously surveyed for biological resources or would create greater environmental impacts in all other disciplines (e.g. Cultural Resource Sites) or other restrictions (e.g., FAA or other restrictions for placement of transmission poles), except for the known population of California ditaxis. The Project owner shall provide compensatory mitigation, at a ratio of 2:1, as described below in Section D for impacts to S2 plants that could not be avoided. Complete avoidance is mandatory on construction laydown areas. The Project owner shall limit the width of the work area, adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads, and other construction or design modifications as necessary to achieve avoidance of any S2 plants detected[12].

   If late-season S2 plants are detected on the solar facility, the Project owner shall implement off-site mitigation, at a ratio of 2:1, for any impacts exceeding 25 percent of the local population. The off-site mitigation may

[10] A “viable” species is one consisting of self-sustaining and interacting populations that are well-distributed throughout the species’ range. “Self-sustaining populations” are those that are sufficiently abundant and have sufficient diversity to display the array of life history strategies and forms to provide for their long-term persistence and adaptability over time. The definition of the term “well-distributed” can vary based on current, historic, and potential population and habitat conditions. Maintaining viability is a means of ensuring, as much as possible, that a species will not go extinct in the foreseeable future. Because species and their environments are dynamic, there is not a single population size above which a species is viable and below which it will become extinct. Viability is best expressed as a level of risk of extinction.

[11] CNDDB State Rank 2 plants are “Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state”.

[12] The CNDDB State Rank 2 plants California ditaxis was detected along the linears within the Project Disturbance Area (Solar Millenium 2010p). Staff concluded the impact was significant and all terms and conditions of Section C.2 shall be implemented. Staff concluded that the direct impacts to Harwood’s milk-vetch were minor and no compensatory mitigation is required beyond the avoidance and minimization measures described in Section A of this condition.

include land acquisition or implementation of a restoration/enhancement program for the species, and shall meet the performance standards described in section D of this Condition. The Project owner must demonstrate, subject to review and approval by the CPM, that the impacts, after mitigation, will not cause a loss of viability for that species. The Project owner shall prepare and implement a Special-Status Plant Mitigation Plan (Plan). The content of the Plan and definitions shall be as described above in subsection C.3, below.

2. Mitigation for CNDDB State Rank 3[13] Plants (Vulnerable). If CNDDB State Rank (S) 3 plants are detected (which constitutes most RPR 4 plants), mitigation is not required unless the occurrence has local or regional significance, in which case the plant occurrence shall be treated as a CNDDB -S2 plant; avoidance and mitigation would be as described above under C.2. A plant occurrence would be considered to have local or regional significance if:

   a. It occurs at the outermost periphery of its range in California;

   b. It occurs in an atypical habitat, region, or elevation for the taxon that suggests that the occurrence may have genetic significance (e.g., that may increase its ability to survive future threats), or;

   c. It exhibits any unusual morphology that is not clearly attributable to environmental factors that may indicate a potential new variety or sub-species.

3. Prepare Special-Status Plant Mitigation Plan. If the project will impact any CNDDB -S1 or S2 plants, or S3 plants of local or regional significance, or new taxa, the Project owner shall prepare and implement a Special-Status Plant Mitigation Plan (Plan). Compensatory mitigation, as described in Section D of this condition, and at a mitigation ratio of 3:1 for Rank 1 plants, and 2:1 for S2 plants and S1 plants of local or regional significance, and new taxa. The Plan shall include, at a minimum, the following components and definitions:

   a. A description of the occurrences of the affected special-status species, ecological characteristics such as soil, hydrology, and other micro-habitat requirements, ecosystem processes required for maintenance of the species or its habitat, reproduction and dispersal mechanisms, pollinators, local distribution, a description of the extent of the population off-site, the percentage of the local population affected, and a description of how these occurrences would be impacted by the Project, including direct and indirect effects. Occurrences shall be considered impacted if they are within the Project footprint, and if they

[13] CNDDB State Rank 3 plants are “Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

would be affected by Project-related hydrologic changes or changes to the local sand transport system.

b. A description of the avoidance and minimization measures that would achieve complete avoidance of occurrences on the Project linears and construction laydown areas. If avoidance is also required on the solar facility (Rank 1 species), provide a description of the measures that would be implemented to avoid or minimize impacts to occurrences on the solar facility. “Avoidance” shall include protection of the ecosystem processes essential for maintenance of the protected plant occurrence, and protection of the seed bank. Isolated ‘islands’ of protected plants disconnected by the Project from natural fluvial, aeolian (wind), or other processes essential for maintenance of the species, shall not be considered avoidance.

c. If off-site mitigation is also required, pursuant to C.1 –C.3 above, the Plan shall include a description of the proposed mitigation (acquisition or restoration/enhancement) and demonstrate how the mitigation will meet the performance standards described in Section D of this condition.

   For CNDDB Rank 1 plants that cannot be avoided (i.e., plants located in the central portion of the solar facility), the Plan must demonstrate that the impacts (after mitigation) will not cause a loss of viability for that species. The assessment of viability shall include: *i*) current literature compilation and review on the affected species, it’s documented and reported occurrences, range and distribution, habitat, and the ecological conditions needed to support it; *ii)* consultation with scientists and others with expertise and local knowledge of the species to gather unpublished data and other information to supplement the literature review findings, and (if available) *iii*) information on species’ habitat relationships, demographics, genetics, and risk factors.

Section D: Off-Site Compensatory Mitigation for Special-Status Plants

Where compensatory mitigation is required under the terms of Section C, above, the Project owner shall mitigate Project impacts to special-status plant occurrences with compensatory mitigation. Compensatory mitigation shall consist of acquisition of habitat supporting the target species, or restoration/enhancement of populations of the target species, and shall meet the performance standards for mitigation described below. In the event that no opportunities for acquisition or restoration/enhancement exist, the Project owner can fund a species distribution study designed to promote the future preservation, protection or recovery of the species. Compensatory mitigation shall be at a ratio of 3:1 for Rank 1 plants, with three acres of habitat acquired or restored/enhanced for every acre of habitat occupied by the special status plant that will be disturbed by the Project Disturbance Area (for example if the area occupied by the special status plant collectively measured is ¼ acre than

the compensatory mitigation will be ¾ of an acre). The mitigation ratio for Rank 2 plants shall be 2:1. So, for the example above, the mitigation ratio would be one-half acre for the Rank 2 plants.

The Project owner shall provide funding for the acquisition and/or restoration/enhancement, initial improvement, and long-term maintenance and management of the acquired or restored lands. The actual costs to comply with this condition will vary depending on the Project Disturbance Area, the actual costs of acquiring compensation habitat, the actual costs of initially improving the habitat, the actual costs of long-term management as determined by a Property Analysis Record (PAR) report, and other transactional costs related to the use of compensatory mitigation.

The Project owner shall comply with other related requirements in this condition:

I. **Compensatory Mitigation by Acquisition:** The requirements for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of special-status plant compensation lands include all of the following:

1. Selection Criteria for Acquisition Lands. The compensation lands selected for acquisition may include any of the following three categories:

   a. Occupied Habitat, No Habitat Threats. The compensation lands selected for acquisition shall be occupied by the target plant population and shall be characterized by site integrity and habitat quality that are required to support the target species, and shall be of equal or better habitat quality than that of the affected occurrence. The occurrence of the target special-status plant on the proposed acquisition lands should be viable, stable or increasing (in size and reproduction).

   b. Occupied Habitat, Habitat Threats. Occupied compensation lands characterized by habitat threats may also be acquired as long as the population could be reasonably expected to recover with habitat restoration efforts (e.g., OHV or grazing exclusion, or removal of invasive non-native plants) and is accompanied by a Habitat Enhancement/Restoration Plan as described in Section D.II, below.

   c. Unoccupied but Adjacent. The Project owner may also acquire habitat for which occupancy by the target species has not been documented, if the proposed acquisition lands are adjacent to occupied habitat. The Project owner shall provide evidence that acquisitions of such unoccupied lands would improve the defensibility and long-term sustainability of the occupied habitat by providing a protective buffer around the occurrence and by enhancing connectivity with undisturbed habitat. This acquisition may include habitat restoration efforts where appropriate,

particularly when these restoration efforts will benefit adjacent habitat that is occupied by the target species.

2. Review and Approval of Compensation Lands Prior to Acquisition. The Project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for special-status plants in relation to the criteria listed above, and must be approved by the CPM.

3. Management Plan. The Project owner or approved third party shall prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The goal of the management plan shall be to support and enhance the long-term viability of the target special-status plant occurrences. The Management Plan shall be submitted for review and approval to the CPM.

4. Integrating Special-Status Plant Mitigation with Other Mitigation lands. If all or any portion of the acquired Desert Tortoise, Waters of the State, or other required compensation lands meets the criteria above for special-status plant compensation lands, the portion of the other species' or habitat compensation lands that meets any of the criteria above may be used to fulfill that portion of the obligation for special-status plant mitigation.

5. Compensation Lands Acquisition Requirements. The Project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM, has approved the proposed compensation lands:

   a. Preliminary Report. The Project owner, or an approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board.

   b. Title/Conveyance. The Project owner shall acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement, as required by the CPM. Any transfer of a conservation easement or fee title must be to CDFW, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM or other public agency approved by the CPM. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be

recorded in favor of CDFW or another entity approved by the CPM. If an entity other than CDFW holds a conservation easement over the compensation lands, the CPM may require that CDFW–or another entity approved by the CPM, in consultation with –CDFW, be named a third party beneficiary of the conservation easement. The Project owner shall obtain approval of the CPM of the terms of any transfer of fee title or conservation easement to the compensation lands.

c. Initial Protection and Habitat Improvement. The Project owner shall fund activities that the CPM requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands. The costs of these activities would use the estimated cost per acre for Desert Tortoise mitigation as a best available proxy, at the ratio of 3:1 for Rank 1 plants and 2:1 for Rank 2 plants, but actual costs will vary depending on the measures that are required for the compensation lands. A non-profit organization, CDFW or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965), if it meets the approval of the CPM in consultation with CDFW, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFW—takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.

d. Property Analysis Record. Upon identification of the compensation lands, the Project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPM before it can be used to establish funding levels or management activities for the compensation lands.

e. Long-term Maintenance and Management Funding. The Project owner shall deposit in the REAT Account, or other CPM approved entity, a capital long-term maintenance and management fee in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands.

The CPM, in consultation with CDFW, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFW takes fee title to the

compensation lands, CDFW shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.

Interest, Principal, and Pooling of Funds. The Project owner shall ensure that an agreement is in place with the long-term maintenance and management fund (endowment) holder/manager to ensure the following requirements are met:

i. Interest. Interest generated from the initial capital long-term maintenance and management fund shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action that is approved by the CPM and is designed to protect or improve the habitat values of the compensation lands.

ii. Withdrawal of Principal. The long-term maintenance and management fund principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the species on the compensation lands.

iii. Pooling Long-Term Maintenance and Management Funds. An entity approved to hold long-term maintenance and management funds for the Project may pool those funds with similar funds that it holds from other projects for long-term maintenance and management of compensation lands for special-status plants. However, for reporting purposes, the long-term maintenance and management funds for this Project must be tracked and reported individually to the CPM.

f. Other Expenses. In addition to the costs listed above, the Project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to the title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFW or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.

g. Mitigation Security. The Project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of

ground-disturbing Project activities. Financial assurances shall be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") approved by the CPM. The amount of the Security shall use the estimated cost per acre for Desert Tortoise mitigation as a best available proxy, at a ratio of 3:1 for Rank 1 plants and 2:1 for Rank 2 plants, for every acre of habitat supporting the target special-status plant species which is significantly impacted by the project. The actual costs to comply with this condition will vary depending on the actual costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a PAR report. Prior to submitting the Security to the CPM, the Project owner shall obtain the CPM's approval of the form of the Security. The CPM may draw on the Security if the CPM determines the Project owner has failed to comply with the requirements specified in this condition. The CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the Security to implement measures in this condition may not fully satisfy the Project owner's obligations under this condition, and the Project owner remains responsible for satisfying the obligations under this condition if the Security is insufficient. The unused Security shall be returned to the Project owner in whole or in part upon successful completion of the associated requirements in this condition.

h. REAT Account. The Project owner may elect to comply with the requirements in this condition for acquisition of compensation lands, initial protection and habitat improvement on the compensation lands, or long-term maintenance and management of the compensation lands by funding, or any combination of these three requirements, by providing funds to implement those measures into the Renewable Energy Action Team (REAT) Account To use this option, the Project owner must make an initial deposit to the REAT Account in an amount equal to the estimated costs (as set forth in the Security section of this condition) of implementing the requirement. If the actual cost of the acquisition, initial protection and habitat improvements, or long-term funding is more than the estimated amount initially paid by the Project owner, the Project owner shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, and the long-term funding requirements as established in an approved PAR or PAR-like analysis. If those actual costs or PAR projections are less than the amount initially transferred by the Applicant, the remaining balance shall be returned to the Project owner.

   The responsibility for acquisition of compensation lands may be delegated to a third party, such as a non-governmental organization

supportive of desert habitat conservation, by written agreement of the Energy Commission. Such delegation shall be subject to approval by the CPM, in consultation with CDFW, BLM and USFWS, prior to land acquisition, enhancement or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented within 18 months of the start of ground disturbance.

II. Compensatory Mitigation by Habitat Enhancement/Restoration: As an alternative or adjunct to land acquisition for compensatory mitigation the Project owner may undertake habitat enhancement or restoration for the target special-status plant species. Habitat enhancement or restoration activities must achieve protection at a 3:1 ratio for Rank 1 plants and 2:1 for Rank 2 plants, with improvements applied to three acres, or two acres, respectively, of habitat for every acre special-status plant habitat directly or indirectly disturbed by the Project Disturbance Area (for example if the area occupied by the special status plant collectively measured is 1/4 acre than the improvements would be applied to an area equal to 3/4 of an acre at a 3:1 ratio, or one-half acre at a 2:1 ratio). Examples of suitable enhancement projects include but are not limited to the following: i) control unauthorized vehicle use into an occurrence (or pedestrian use if clearly damaging to the species); ii) control of invasive non-native plants that infest or pose an immediate threat to an occurrence; iii) exclude grazing by wild burros or livestock from an occurrence; or iv) restore lost or degraded hydrologic or geomorphic functions critical to the species by restoring previously diverted flows, removing obstructions to the wind sand transport corridor above an occurrence, or increasing groundwater availability for dependent species.

If the Project owner elects to undertake a habitat enhancement project for mitigation, the project must meet the following performance standards: The proposed enhancement project shall achieve rescue of an off-site occurrence that is currently assessed, based on the NatureServe threat ranking system[14] with one of the following threat ranks: a) long-term decline >30%; b) an immediate threat that affects >30% of the population, or c) has an overall threat impact that is High to Very High. "Rescue" would be considered successful if it achieves an improvement in the occurrence trend to "stable" or "increasing" status, or downgrading of the overall threat rank to slight or low (from "High" to "Very High").

[14] Master, L., D. Faber-Langendoen, R. Bittman, G. A., Hammerson, B. Heidel, J. Nichols, L. Ramsay, and A. Tomaino. 2009. *NatureServe Conservation Status Assessments: Factors for Assessing Extinction Risk.* NatureServe, Arlington, VA. Online: http://www.natureserve.org/publications/ConsStatusAssess_StatusFactors.pdf, "Threats". See also: Morse, L.E., J.M. Randall, N. Benton, R. Hiebert, and S. Lu. 2004. An Invasive Species Assessment Protocol: Evaluating Non-Native Plants for Their Impact on Biodiversity. Version 1. NatureServe, Arlington, Virginia. Online: http://www.natureserve.org/publications/pubs/invasiveSpecies.pdf

If the Project owner elects to undertake a habitat enhancement project for mitigation, they shall submit a Habitat Enhancement/Restoration Plan to the CPM for review and approval, and shall provide sufficient funding for implementation and monitoring of the Plan. The amount of the Security shall use the estimated cost per acre for Desert Tortoise mitigation as a best available proxy, at the ratio of 3:1 for Rank 1 plants and 2:1 for Rank 2 plants, for every acre of habitat supporting the target special-status plant species which is directly or indirectly impacted by the project. The amount of the security may be adjusted based on the actual costs of implementing the enhancement, restoration and monitoring. The implementation and monitoring of the enhancement/restoration may be undertaken by an appropriate third partysubject to approval by the CPM. The Habitat Enhancement/Restoration Plan shall include each of the following:

1. Goals and Objectives. Define the goals of the restoration or enhancement project and a measurable course of action developed to achieve those goals. The objective of the proposed habitat enhancement plan shall include restoration of a target special-status plant occurrence that is currently threatened with a long-term decline. The proposed enhancement plan shall achieve an improvement in the occurrence trend to “stable” or “increasing” status, or downgrading of the overall threat rank to slight or low (from “High” to “Very High”).

2. Historical Conditions. Provide a description of the pre-impact or historical conditions (before the site was degraded by weeds or grazing or ORV, etc.), and the desired conditions.

3. Site Characteristics. Describe other site characteristics relevant to the restoration or enhancement project (e.g., composition of native and pest plants, topography and drainage patterns, soil types, geomorphic and hydrologic processes important to the site or species.

4. Ecological Factors. Describe other important ecological factors of the species being protected, restored, or enhanced such as total population, reproduction, distribution, pollinators, etc.

5. Methods. Describe the restoration methods that will be used (e.g., invasive exotics control, site protection, seedling protection, propagation techniques, etc.) and the long-term maintenance required. The implementation phase of the enhancement must be completed within five years.

6. Budget. Provide a detailed budget and time-line, and develop clear, measurable, objective-driven annual success criteria.

7. Monitoring. Develop clear, measurable monitoring methods that can be used to evaluate the effectiveness of the restoration and the benefit to the affected species. The Plan shall include a minimum of five years of quarterly monitoring, and then annual monitoring for the remainder of the enhancement project, and until the performance standards for

rescue of a threatened occurrence are met. At a minimum the progress reports shall include: quantitative measurements of the projects progress in meeting the enhancement project success criteria, detailed description of remedial actions taken or proposed, and contact information for the responsible parties.

8. Reporting Program. The Plan shall ensure accountability with a reporting program that includes progress toward goals and success criteria. Include names of responsible parties.

9. Contingency Plan. Describe the contingency plan for failure to meet annual goals.

10. Long-term Protection. Include proof of long-term protection for the restoration site. For private lands this would include conservations easements or other deed restrictions; projects on public lands must be contained in a Desert Wildlife Management Area, Wildlife Habitat Management Area, or other land use protections that will protect the mitigation site and target species.

II. Contingency Measures

1. Preservation of the Germplasm of Affected Special-Status Plants. For all significant impacts to special-status plants, mitigation shall also include seed collection from the affected special-status plants population on-site prior to construction to conserve the germplasm and provide a seed source for restoration efforts. The seed shall be collected under the supervision or guidance of a reputable seed storage facility such as the Rancho Santa Ana Botanical Garden Seed Conservation Program, San Diego Natural History Museum, or the Missouri Botanical Garden. The costs associated with the long-term storage of the seed shall be the responsibility of the Project owner. Any efforts to propagate and reintroduce special-status plants from seeds in the wild shall be carried out under the direct supervision of specialists such as those listed above and as part of a Habitat Restoration/Enhancement Plan approved by the CPM.

2. Compensatory Mitigation by Conducting or Contributing to a Management Plan for the Affected Species. Subject to approval of the CPM, as a contingency measure in the event there are no opportunities for mitigation through acquisition or restoration/enhancement to meet the obligations for off-site mitigation as described in Section C.1-3 of this condition, , a Management Plan for the affected special-status plant species may be conducted or funded. The goal of the Management Plan is to devise a science-based, region-wide strategy to ensure the long-term viability of the affected species, and to acquire, protect, and restore existing populations and the habitat that supports them. The information gathered shall be used to develop conservation approaches to address the identified risk factors. These approaches include land allocations,

restoration needs, identifying and preserving important refugia to facilitate species dispersal and maintain biodiversity in the face of climate change, recommending Best Management Practices or other measures that could be used to minimize threats, and identifying planning needs at the regional level. The results of the study would also be provided to the resource agencies, conservation organizations, and academic institutions, as well as the state's Natural Diversity Database and Consortium of California Herbaria.

3. Under this contingency measure, the Project owner shall acquire all available information on the distribution, status or health of known occurrences, ecological requirements, and ownership and management opportunities of the affected special-status plant species and other special status plants known to occur in the Chuckwalla Valley. Some of these late blooming species are only known from a few viable occurrences in California, and historic occurrences that have not been re-located or surveyed since they were first documented. At a minimum, the study shall include the following:

   a. Occurrence and Life History Review. The Study shall include an evaluation of all documented, historical and reported localities for the affected species, and a review of current information on the species life history. This would include a review of the CNDDB database, records from regional and national herbaria, literature review, consultation with U.C. Riverside, San Diego Natural History Museum, and other educational institutions or natural heritage organizations in California, Arizona, and Nevada, etc.), other biotechnical survey reports from the region, and information from regional botanical experts.

   b. Conduct Site Visits to Documented and Reported Localities. Documented and reported occurrences would be evaluated in the field during the appropriate time of the year for each late blooming species. If located, these occurrences would be evaluated for population size (area and quantity), population trend, ecological characteristics, soils, habitat quality, potential threats, degree and immediacy of threats, ownership and management opportunities. GPS location data would also be collected during these site visits.

   c. Survey Surrounding Areas. Areas surrounding the occurrences that contain habitat suitable to support the affected species shall be surveyed to determine the full extent of its range and distribution. If additional populations are found, collect data (GPS and assessment) on these additional populations consistent with III.2 above.

   d. Prepare Report on Status, Distribution, and Management Needs. A report shall be prepared that contains the results of the surveys and assessment. The report shall contain the following components: a) Range and Distribution (including maps and GPS data); b)

Abundance and Population Trends; c) Life History; d) Habitat Necessary for Survival; d) Factors Affecting Ability to Survive and Reproduce; e) Degree and Immediacy of Threat; f) Ownership and Management Opportunities for Protection or Recovery; g) Sources of Information, and g) Conclusions. The conclusions shall contain an explanation of whether the species' survival is threatened by any of the following factors: i) present or threatened modification or destruction of its habitat; ii) competition; iii) disease; iv) other natural occurrences (such as climate change) or human-related activities. This valuable information will provide a better understanding of the ecological factors driving the distribution of these species, and will identify opportunities for mitigation and management opportunities for recovery. All data from this study will be submitted for incorporation into the CNDDB system and the study report will be made available to resource agencies, and conservation groups, and other interested parties.

e. The cost to implement or fund the study shall be no greater than the cost for acquisition, enhancement, and long-term management of compensatory mitigation lands based on the specifications and standards for acquisition or restoration/enhancement described above under D.I and D.II.

Verification: The Special-Status Plant Impact Avoidance and Minimization Measures shall be incorporated into the BRMIMP as required under Condition of Certification **BIO-7.**

The Project owner shall notify the CPM and the BLM State Botanist no less than 14 days prior to the start of late-season surveys and provide a target list of late season special-status plants that will be considered. Concurrently, the Project owner shall coordinate with BLM to obtain a permit for seed collection. Seed collection is required for all special-status plants located within the Project Disturbance Area and shall be conducted according to the specifications in Section D.III.1 of this condition and with all terms and conditions of the BLM permit.

Raw GPS data, metadata, and CNDDB field forms shall be submitted to the CPM and the BLM State Botanist within four weeks of the completion of each survey. A preliminary summary of results for the late summer/fall botanical surveys, prepared according to guidelines in Section B of this condition, shall also be submitted to the CPM and BLM's State Botanist within two weeks following the completion of the surveys. If surveys are split into more than one period, then a summary letter shall be submitted following each survey period. The Final Summer-Fall Botanical Survey Report, GIS shape files and metadata shall be submitted to the BLM State Botanist and the CPM no less than 30 days prior to the start of site mobilization and construction activities. The Final Report shall include a detailed accounting of the acreage of Project impacts to special-status plant occurrences.

For any special-status plant species located within the Project Disturbance Area, the Project owner shall submit to the CPM to less than 30 days prior to the start of site mobilization and construction activities proof, in the form of a letter or receipt, of the seed or other propagules collected pursuant to Section D.III #1 of this Condition.

The draft conceptual Special-Status Plant Mitigation Plan, as described under Section C.4 of this condition, shall be submitted to the CPM for review and approval no less than 30 days prior to the start of site mobilization and construction activities.

The Project owner shall immediately provide written notification to the CPM, CDFW, USFWS, and BLM State Botanist if it detects a State- or Federal-Listed Species, or BLM Sensitive Species at any time during its late summer/fall botanical surveys or at any time thereafter through the life of the Project, including conclusion of Project closure.

No less than 30 days prior to the start of ground-disturbing activities the Project owner shall submit grading plans and construction drawings to the CPM which depict the location of Environmentally Sensitive Areas and the Avoidance and Minimization Measures contained in Section A of this Condition, and under Section C.1-3.

If compensatory mitigation is required, pursuant to Section C.1-3, no less than 30 days prior to the start of site mobilization and construction activities the Project owner shall submit to the CPM the form of Security adequate to acquire compensatory mitigation lands and/or undertake habitat enhancement or restoration activities, as described in this condition. Actual Security shall be provided 7 days prior to start of site mobilization and construction activities.

No fewer than 90 days prior to acquisition of compensatory mitigation lands, the Project owner shall submit a formal acquisition proposal and draft Management Plan for the proposed lands to the CPM, with copies to CDFW, USFWS, and BLM, describing the parcels intended for purchase and shall obtain approval from the CPM prior to the acquisition. No fewer than 90 days prior to acquisition of compensatory mitigation lands, the Project owner shall submit to the CPM and obtain CPM approval of any agreements to delegate land acquisition to an approved third party, or to manage compensation lands; such agreement shall be executed and implemented within 18 months of the start of ground disturbance.

No fewer than 30 days after acquisition of the property the Project owner shall deposit the funds required by Section I e above (long term management and maintenance fee) and provide proof of the deposit to the CPM.

The Project owner or an approved third party shall complete the acquisition and all required transfers of the compensation lands, and provide written verification to the CPM of such completion no later than 18 months after the start of site mobilization and construction activities. If a third party is being used for the acquisition, the Project owner shall ensure that funds needed to accomplish the acquisition are transferred in timely manner to facilitate the planned acquisition and to ensure the land can be acquired and transferred prior to the 18-month deadline. If habitat enhancement is proposed, no later than six months following the start of ground-disturbing activities, the Project owner shall obtain CPM approval of the final Habitat Enhancement/Restoration

Plan, prepared in accordance with Section D, and submit to the CPM or a third party approved by the CPM Security adequate for long-term implementation and monitoring of the Habitat Enhancement/Restoration Plan.

Enhancement/restoration activities shall be initiated no later than 12 months from the start of construction. The implementation phase of the enhancement project shall be completed within five years of initiation. Until completion of the five-year implementation portion of the enhancement action, a report shall be prepared and submitted as part of the Annual Compliance Report. This report shall provide, at a minimum: a summary of activities for the preceding year and a summary of activities for the following year; quantitative measurements of the Project's progress in meeting the enhancement project success criteria; detailed description of remedial actions taken or proposed; and contact information for the responsible parties.

If a contingency measure is required, as described in Section D.III of this condition, the Project owner shall submit commence no later than six months following the start of ground-disturbing activities. The draft study shall be submitted to the CPM and BLM State Botanist for review and approval no more than two years following the start of ground-disturbing activities. The final study shall be submitted no more than 30 months following the start of ground-disturbing activities.

If a Distribution Study is implemented as contingency mitigation, the study shall be initiated no later than 6 months from the start of construction. The implementation phase of the study shall be completed within two years of the start of construction.

Within 18 months of site mobilization and construction activities, the Project owner shall transfer to the CPM or an approved third party the difference between the Security paid and the actual costs of (1) acquiring compensatory mitigation lands, completing initial protection and habitat improvement , and funding the long-term maintenance and management of compensatory mitigation lands; and/or (2) implementing and providing for the long-term protection and monitoring of habitat enhancement or restoration activities.

Implementation of the special-status plant impact avoidance and minimization measures shall be reported in the Monthly Compliance Reports prepared by the Designated Botanist. Within 30 days after completion of Project construction, the Project owner shall provide to the CPM, for review and approval, in consultation with the BLM State Botanist, a written construction termination report identifying how measures have been completed.

The Project owner shall submit a monitoring report every year for the life of the project to monitor effectiveness of protection measures for all avoided special-status plants to the CPM and BLM State Botanist. The monitoring report shall include: dates of worker awareness training sessions and attendees, completed CNDDB field forms for each avoided occurrence on-site and within 100 feet of the Project boundary off-site, and description of the remedial action, if warranted and planned for the upcoming year. The completed forms shall include an inventory of the special-status plant occurrences and description of the habitat conditions, an indication of population and habitat quality trends.

SAND DUNE/MOJAVE FRINGE-TOED LIZARD MITIGATION

BIO-20 To mitigate for habitat loss and direct impacts to Mojave fringe-toed lizards the Project owner shall provide compensatory mitigation, which may include compensation lands purchased in fee or in easement in whole or in part, at the following ratios:

- 3:1 mitigation for direct impacts to stabilized and partially stabilized sand dunes (per **BIO-29 – Table 2** or final acreage impacted by the Project footprint);
- 1:1 mitigation for direct impacts non-dune Mojave fringe-toed lizard habitat (per **BIO-29 – Table 2** or final acreage impacted by the Project footprint); and
- 0.5:1 mitigation for indirect impacts to stabilized and partially stabilized sand dunes (per **BIO-29 – Table 2** or final acreage impacted by the Project footprint).

If compensation lands are acquired, the Project owner shall provide funding for the acquisition in fee title or in easement, initial habitat improvements, and long-term maintenance and management of the compensation lands. In addition, the compensation lands must include, at a minimum, the number acres of stabilized and partially stabilized sand dune habitat shown in **BIO-29 Table 2**.

1. Criteria for Compensation Lands: The compensation lands selected for acquisition shall:
    a. Provide suitable habitat for Mojave fringe-toed lizards, and, aside from the minimum amount of stabilized and partially stabilized sand dunes, may include stabilized and partially stabilized desert dunes, sand drifts over playas, or Sonoran creosote bush scrub;

    b. Be within the Palen or Chuckwalla valleys with potential to contribute to Mojave fringe-toed lizard habitat connectivity and build linkages between known populations of Mojave fringe-toed lizards and preserve lands with suitable habitat;

    c. Be prioritized near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;

    d. Provide quality habitat for Mojave fringe-toed lizard that has the capacity to regenerate naturally when disturbances are removed;

    e. Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible;

f. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;

g. Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat;

h. Have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFW, BLM and USFWS, agrees in writing to the acceptability of the land; and

i. Be on land for which long-term management is feasible.

2. Security for Implementation of Mitigation: The Project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of Mojave fringe-toed lizard habitat as described in this condition. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the CPM according to the measures outlined in **BIO-12**, and within the time period specified for this assurance (see the verification section at the end of this condition). The final amount due will be determined by an updated appraisal and a PAR analysis conducted as described in **BIO-12**, but current estimates are included in **Biological Resources Tables 12** and **13** located at the beginning of the conditions of certification subsection.

3. Preparation of Management Plan: The Project owner shall submit to the CPM, BLM, and CDFW a draft Management Plan that reflects site-specific enhancement measures for the Mojave fringe-toed lizard habitat on the acquired compensation lands. The objective of the Management Plan shall be to enhance the value of the compensation lands for Mojave fringe-toed lizards, and may include enhancement actions such as weed control, fencing to exclude livestock, erosion control, or protection of sand sources or sand transport corridors.

Verification: No later than 30 days prior to beginning site mobilization and construction activities, the Project owner shall provide written verification of an approved form of Security in accordance with this condition of certification. Actual Security shall be provided no later than 7 days prior to the beginning of Project ground-disturbing activities for each Project phase as described in **BIO-29**. The Project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of Project ground-disturbing activities for each Project phase.

No less than 90 days prior to acquisition of the property, the Project owner shall submit a formal acquisition proposal to the CPM, CDFW, and USFWS describing the parcels intended for purchase.

The Project owner, or an approved third party, shall provide the CPM, BLM, and CDFW, with a management plan for the compensation lands and associated funds within 180

days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with BLM and CDFW.

Within 90 days after completion of Project construction, the Project owner shall provide to the CPM and CDFW an analysis with the final accounting of the amount (detailed by habitat type) of Mojave fringe-toed lizard habitat disturbed during Project construction.

The Project owner shall provide written verification to the CPM, and CDFW that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient no later than 18 months from the start of ground-disturbing activities.

MITIGATION FOR IMPACTS TO STATE WATERS

BIO-21 The Project owner shall implement the following measures to avoid, minimize and mitigate for direct and indirect impacts to waters of the state and to satisfy requirements of California Fish and Game Code sections 1600 and 1607.

1. Acquire Off-Site State Waters: The Project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes state jurisdictional waters per **BIO-29 – Table 2**, or the area of state waters directly or indirectly impacted by the final Project footprint. The Project footprint means all lands disturbed by construction and operation of the Palen Project, including all linears. The parcel or parcels comprising the ephemeral washes shall include desert dry wash woodland per **BIO-29 – Table 2**, or the acreage of desert dry was woodland impacted by the final Project footprint at a 3:1 ratio and un-vegetated ephemeral wash at a 1:1 ratio. The terms and conditions of this acquisition or easement shall be as described in Condition of Certification **BIO 12**, and the timing associated with **BIO-29** (phasing). The current estimated costs are included in **BIO-29 – Table 3** located at the beginning of the Conditions of Certification subsection. Mitigation for impacts to state waters shall occur within the Chuckwalla, East Salton Sea, Hayfield, Rice, or portion of Whitewater within the NECO, Hydrologic Units (HUs) or the Palo Verde Watershed and be prioritized within the Chuckwalla HU in the Palen or adjacent watersheds.

2. Security for Implementation of Mitigation: The Project owner shall provide financial assurances to the CPM and CDFW to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of state waters as described in this condition. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the CPM and CDFWin the form of an irrevocable letter of credit, a pledged savings account or Security prior to initiating ground-disturbing Project activities. Prior to submittal to the CPM, the Security shall be approved by the CPM, in consultation with CDFW, to ensure funding. The final amount due shall be

determined by updated appraisals and the PAR analysis conducted pursuant to **BIO-12.**

3. Preparation of Management Plan: The Project owner shall submit to the CPM and CDFW a draft Management Plan that reflects site-specific enhancement measures for the drainages on the acquired compensation lands. The objective of the Management Plan shall be to enhance the wildlife value of the drainages, and may include enhancement actions such as weed control, fencing to exclude livestock, or erosion control.

4. Code of Regulations: The Project owner shall provide a copy of this condition (Condition of Certification **BIO-21**) from the Energy Commission Decision to all contractors, subcontractors, and the Applicant's Project supervisors. Copies shall be readily available at work sites at all times during periods of active work and must be presented to any CDFW personnel upon demand. The CPM reserves the right to issue a stop work order or allow CDFW to issue a stop work order after giving notice to the Project owner and the CPM, if the CPM in consultation with CDFW, determines that the Project owner has breached any of the terms or conditions or for other reasons, including but not limited to the following:

    a. The information provided by the Applicant regarding impacts to waters of the state is incomplete or inaccurate;

    b. New information becomes available that was not known in preparing the terms and conditions; or

    c. The Project or Project activities as described in the Revised Staff Assessment have changed.

5. Road Crossings at Streams. The Project owner shall preserve pre-development downstream flows and sediment transport in washes crossed by permanent roads by incorporating culverts and Arizona crossings at stream crossings. Arizona crossings are the preferred option and shall be employed wherever such crossings do not present a safety hazard and where the roadbed elevation allows the construction of such crossings. Drainages that have been graded for temporary construction access shall be restored to original contours and surface drainage patterns and shall be revegetated according to specifications in **BIO-8**.

6. Best Management Practices: The Project owner shall also comply with the following conditions to protect drainages near the Project Disturbance Area:

    a. The Project owner shall minimize road building, construction activities and vegetation clearing within ephemeral drainages to the extent feasible.

    b. The Project owner shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter

ephemeral drainages or be placed in locations that may be subjected to high storm flows.

c. The Project owner shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey these laws, and it shall be the responsibility of the Project owner to ensure compliance.

d. Spoil sites shall be located at least 30 feet from the boundaries and drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages.

e. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from Project-related activities, shall be prevented from contaminating the soil and/or entering waters of the state. These materials, placed within or where they may enter a drainage, shall be removed immediately.

f. No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into, or placed where it may be washed by rainfall or runoff into, waters of the state.

g. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any drainage.

h. No equipment maintenance shall occur within 150 feet of any ephemeral drainage where petroleum products or other pollutants from the equipment may enter these areas under any flow.

7. Changes of Conditions. A notifying report shall be provided to the CPM and CDFW if a change of conditions is identified. As used here, change of condition refers to the process, procedures, and methods of operation of a Project; the biological and physical characteristics of a Project area; or the laws or regulations pertinent to the Project as defined below. A copy of the notifying change of conditions report shall be included in the annual reports or until it is deemed unnecessary by the CPM, in consultation with CDFW.

   a. Biological Conditions: a change in biological conditions includes, but is not limited to, the following: 1) the presence of biological resources within or adjacent to the Project area, whether native or non-native, not previously known to occur in the area; or 2) the presence of biological resources within or adjacent to the Project area, whether native or non-native, the status of which has changed to endangered, rare, or

threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.

b. Physical Conditions: a change in physical conditions includes, but is not limited to, the following: 1) a change in the morphology of a river, stream, or lake, such as the lowering of a bed or scouring of a bank, or substantial changes in stream form and configuration caused by storm events; 2) the movement of a river or stream channel to a different location; 3) a reduction of or other change in vegetation on the bed, channel, or bank of a drainage, or 4) changes to the hydrologic regime such as fluctuations in the timing or volume of water flows in a river or stream.

c. Legal Conditions: a change in legal conditions includes, but is not limited to, a change in Regulations, Statutory Law, a Judicial or Court decision, or the listing of a species, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.

Verification: No less than 30 days prior to the start of site mobilization and construction-related ground disturbance activities potentially affecting waters of the state, the Project owner shall provide written verification (i.e., through incorporation into the BRMIMP) to the CPM that the above best management practices will be implemented. The Project owner shall also provide a discussion of work in waters of the state in Annual Compliance Reports for the duration of the Project.

No less than 30 days prior to beginning Project ground-disturbing activities for each project phase as described in **BIO-29**, the Project owner shall provide to the CPM design drawings demonstrating how pre-development drainage patterns (location and volume of flows) to drainages downstream of the Project boundaries will be unaffected. At the same time the Project owner shall provide design drawings for temporary and permanent stream crossings.

No less than 30 days prior to beginning Project ground-disturbing activities, the Project owner shall provide the form of Security in accordance with this condition of certification. No later than 7 days prior to beginning Project ground-disturbing activities, the Project owner shall provide written verification of the actual Security. The Project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of Project ground-disturbing activities.

The Project owner, or an approved third party, shall provide the CPM, BLM, CDFW, and USFWS with a management plan for the compensation lands and associated funds within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with CDFW and the USFWS.

Within 90 days after completion of Project construction, the Project owner shall provide to the CPM, BLM, USFWS, and CDFW an analysis with the final accounting of the amount of jurisdictional state waters disturbed during Project construction.

The Project owner shall provide written verification to the CPM, BLM, USFWS and CDFW that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient no later than 18 months of the start of Project ground-disturbing activities.

The Project owner shall notify the CPM and CDFW, in writing, at least five days prior to initiation of Project ground-disturbing activities in jurisdictional state waters and at least five days prior to completion of Project activities in jurisdictional areas. The Project owner shall notify the CPM and CDFW of any change of conditions to the Project, impacts to state waters, or the mitigation efforts.

CLOSURE AND RECLAMATION PLAN

BIO-22 Upon Project closure the Project owner shall implement a final Closure and Reclamation Plan. The Closure and Reclamation Plan shall include a cost estimate for implementing the proposed closure and reclamation activities, and shall be consistent with the guidelines in BLM's 43 CFR 3809.550 et seq.

Verification: No fewer than 30 days prior to the start of site mobilization and construction activities or alternate date as agreed to with the BLM, the Project owner shall provide to the CPM (for review) and BLM (for review and approval) a draft Closure and Reclamation Plan. The plan shall be finalized prior to the start of commercial operation and reviewed every five years thereafter and submitted to the CPM for review and to the BLM for approval. Modifications to the approved Closure and Reclamation Plan shall be made only after approval from the BLM. The Project owner shall provide a copy of the approved Closure and Reclamation Plan and any BLM approved revisions to the CPM.

GROUNDWATER DEPENDENT VEGETATION MONITORING

BIO-23 The Project owner shall prepare a Groundwater-Dependent Vegetation Monitoring Plan for monitoring the Project effects of groundwater pumping on groundwater dependent vegetation. The monitoring shall encompass the area depicted in *Figure Soil and Water14 (Chuckwalla Valley Groundwater Basin Impacts to Groundwater Basin Impacts to Groundwater Levels, End of Operation)* within the 0.1-foot drawdown polygon of the Model Predicted Drawdown. The vegetation and groundwater data collected as part of the Plan shall be used to determine if remedial action is required, as described in **BIO-24.**

The Project owner may forgo development of a Groundwater Dependent Vegetation Monitoring Plan, or may cease implementation of such a plan, by providing evidence to the CPM that the source of water for the GDEs is a shallow perched water-bearing zone rather than the regional groundwater system and that the shallow perched water-bearing zone is unrelated and not influenced by the regional groundwater system that the Project owner proposes to use for water as described below under 15a – 15d.

The Project owner shall develop and implement a Groundwater-Dependent Vegetation Monitoring Plan (Plan) that meets the performance standards described below and includes the following components:

1. Monitoring Objectives and Performance Standards. The objectives of the Plan shall be to monitor the Project effects of groundwater pumping on vegetation and groundwater-dependent ecosystems (GDEs) and, in conjunction with the remedial action described in **BIO-24**, to ensure that the Project groundwater pumping has a less than significant effect on biological resources. Monitoring shall be conducted at a level of detail adequate for detecting adverse effects, as reflected in vegetation attributes and groundwater levels in the shallow (alluvial) aquifer. The baseline for groundwater levels shall be the lowest baseline water level as measured at the Project site prior to the start of groundwater pumping.

2. Location of Monitoring Plots. The monitoring plots shall be established within the area depicted in *Figure Soil and Water 14 (Project Only Revised Operational Water Supply End of 30 YearsChuckwalla Valley Groundwater Basin Impacts to Groundwater Basin Impacts to Groundwater Levels, End of Operation)* within the Model Predicted Drawdown showing the 0.1-foot drawdown polygon . The majority of the plots shall be in the area north and east of the Project site, where groundwater-dependent ecosystems (GDEs) and the intersection of the ground surface and shallow groundwater are located, in the topographic lows in the valley.

3. Monitoring Plots and Controls. Because of the variation in vegetation types and depth to groundwater within the predicted groundwater drawdown zone, the study design shall treat the monitoring plot with a corresponding control plot as a pair (versus comparing the mean of all treatment plots to the mean of all control plots). The "control" plots shall consist of the data collected at the same plot during the baseline (pre-disturbance) monitoring for a pre-disturbance vs. post-disturbance comparison. Appropriate statistical methods shall be used to analyze the differences between the control and monitoring plots (for example, a one-tailed paired-sample statistical test (Manly 2008)[15]).

4. Off-Site Reference Plots: Off-site monitoring plots shall be established as reference sites to distinguish changes in plant vigor seen at the site from the effects of a region-wide drought. The off-site reference plots can be located within Chuckwalla Valley but shall be within areas that would not be affected hydrologically by groundwater pumping for the Project or other projects or agricultural operations. Off-site monitoring reference plots shall be located in the same general hydrologic and geologic setting (i.e., playa margins), in the same climatic region (Sonoran Desert region of California), and contain the same natural communities or vegetation alliances as those to which they are being compared. Impacts from pests and diseases, if present, must also be considered and excluded or adjusted for as part of the analysis. Data on climate and surface runoff in

[15] Manly, B. 2008. Statistics for Environmental Science and Management (2nd ed). CRC Press/Chapman and Hall. 292 pages.

the study area shall be collected to identify “drought” conditions and correlate groundwater changes and weather changes.

5. Sample Size and Design The number of monitoring sites shall be established using appropriate statistical methods (for example, by a “priori power analysis” (Elzinga et al. 1998)) and shall be sufficient to achieve adequate (90%) statistical power. Following collection of the baseline data a statistical analysis shall be conducted to refine the power analysis and evaluate the adequacy of the sampling design. If the analysis of baseline data indicates that the sampling design is insufficient to achieve adequate statistical power, the design shall be modified (for example, by adding additional monitoring sites).

6. Water Table Monitoring. The Project owner shall install piezometers at each of the dominant vegetation community types within or near the monitoring plots. The number, location, depth and monitoring frequency of the piezometers shall be sufficient to establish the effect of Project groundwater pumping on the shallow aquifer water levels. At a minimum, each piezometer shall be monitored twice per year, in early spring (March) and post-monsoon (September). The piezometers shall be designed to monitor the maximum expected fluctuation in the water table and to last the duration of the Project. Data collected from the Project wells and piezometers for **SOIL &WATER-4** (Groundwater Level Monitoring, Mitigation, and Reporting) and **S&W-6** (groundwater monitoring for the evaporation ponds and land treatment unit) shall be used to refine the modeling of the predicted groundwater drawdown and zone of influence after two years of data collection following the start of groundwater production. The Project owner shall submit to the CPM, for review and approval, a report on the results of the refined modeling. The report shall include all calculations and assumptions made in development of report data and interpretations, and all well monitoring data and piezometer data collected and used in the calculations. If the results indicate that the drawdown and zone of influence is greater than the effect predicted in the GRI, and the GDE are found to be drawing groundwater that is hydraulically connected to the regional groundwater system, then the project owner will submit a revised monitoring plan for GDE areas outside of the original monitoring area.

7. Soil Monitoring. Soil salinity and pH shall be monitored annually at every monitoring plot. The Plan shall describe the monitoring devices and techniques used to collect and interpret this data, relative to ecosystem function. One soil core sample per community type shall be collected as part of the baseline data to establish the approximate rooting depth of the phreatophytes, and thereafter shall be repeated every five years. The coring method must provide a continuous core that will provide visual examination of roots and root nodules, soil profile, and soil moisture.

8. Baseline and Long-term Data Collection. At a minimum, baseline data shall be collected at all monitoring sites prior to the start of pumping;

however, vegetation data collected from sites farther from the nearest wells will allow for the collection of multiple years of "pre-disturbance" data. Because the proposed well in the northeast portion of the ~~P~~project (Soil & Water Figure 14, is located in very close proximity to known phreatophytes, this well shall not be used within the first 3 years of the ~~P~~project in order to allow an adequate period for baseline data collection in the area northeast of the Project. Subject to approval by the CPM, if groundwater pumping ceases or is replaced by other water sources, groundwater and vegetation monitoring shall continue for a period of 5 years or until refined modeling indicates that the groundwater levels have returned to baseline levels and the decline in plant vigor has been restored to pre-disturbance conditions.

9. Target Vegetation Population. The monitoring sites shall include GDEs and other vegetation potentially affected by the drawdown that occur**s** within the zone of influence. The following phreatophytes have been documented to occur around Palen Lake: honey mesquite (*Prosopis glandulosa*); iodine bush (*Allenrolfea occidentalis*), bush seep-weed (*Suaeda moquinii*), jackass clover (*Wislizenia refracta*), four-wing saltbush (*Atriplex canescens*), allscale (*A. polycarpa*), spinescale (*A. spinifera*), a potentially new taxon of saltbush (*Atriplex* sp. nov. Andre), ironwood (*Olneya tesota*), palo verde (*Cercidium microphyllum*), cat's claw (*Acacia greggii*), and smoke tree (*Psorothamnus spinosus).*The final number of each community type sample needed shall be based on the *priori* power test conducted after the first year of baseline data collection.

10. Fine-Scale Vegetation Mapping. Within the monitoring sites vegetation shall be mapped to the alliance level, consistent with classification protocol in the *Manual of California, 2nd edition* (Sawyer et al. 2009) but any important associations shall also be mapped. Mapping shall be done using minimum 1 meter resolution color orthophotos or higher resolution infrared imagery. The mapping shall also be used to determine the acreages of GDEs and establish the amount of security to be deposited in the event that adverse effects are detected during the monitoring. Boundaries of the permanent plots and any off-site reference sites shall be recorded using GPS technology and depicted on the geo-referenced aerials. GIS shapefiles and metadata shall be submitted along with the draft Plan and any subsequent revisions to the Plan (i.e., following the collection of baseline data and subsequent power analysis).

11. Guidelines for the Monitoring Plan. The Groundwater-Dependent Vegetation Monitoring Plan (Plan) shall be prepared with guidance from *Measuring and Monitoring Plant Populations* (Elzinga et al. 1998). The Plan shall provide a detailed description of each of the following components:

    a. Sampling Design. The sampling design shall include a description of: a) the populations (vegetation types) sampled; b) number, size, and shape of the sampling units; c) layout of the sampling units; d) methods for permanently marking plots in the field; e) monitoring

schedule/frequency; f) vegetation and other attributes sampled; and g) sampling objectives (target/threshold, change/trend-based) for each attribute.

b. Habitat Function and Values. The Plan shall describe the hydrologic, geologic/geomorphic, geochemical, biological and ecological characteristics of the GDEs, and shall also describe whether species are obligate or facultative; root growth and water acquisition characteristics; morphological adaptations to the desert environment; reproduction and germination characteristics; general and micro-habitat preferences; obligate or facultative halophytes and phreatophytes; role in the morphology of dunes; and importance to wildlife, etc.

c. Field techniques for measuring vegetation. This will include the vegetation (or other) attributes selected based on a demonstrated knowledge of the biology and morphology of the species, and include a discussion of the limitations involved in each measurement. Examples of appropriate field techniques for measuring drought response include: percent dieback; live crown density; crown height and width, percent cover of live (versus dead or residual) vegetation, percent cover/frequency of associated species; percent composition of native versus non-native species; and percent cover based on wetland status codes (OBL, FACW, FAC, FACU, UPL[16]) and status as phreatophytes or halophytes. Photo monitoring shall not be considered an acceptable monitoring method but may be useful to conduct periodically (e.g., every 3 to 5 years).

d. Data Management. Including how the data will be recorded in the field (e.g., using a GPS data dictionary), processed and stored.

e. Training of personnel. Describe minimum standards for training and monitoring personnel.

f. Statistical analysis. Describe statistical methods used to analyze the monitoring data (incorporating the minimum standards for statistical power and error rate described above).

12. Peer Review of the Plan. The draft Plan shall undergo a peer review by recognized experts, which shall include one or more scientists with expertise in: the preparation of monitoring plans for plant populations; the physiological responses of desert phreatophytes to drought stress; assessing the effects of groundwater withdrawal on vegetation in the desert region; and biostatistics. The Project owner shall provide the resumes of suggested peer reviewers to the CPM for review and approval.

[16] OBL= Obligate Wetland; FACW= Facultative Wetland; FAC= Facultative; FACU= Facultative Upland UPL= Obligate Upland. *In;* U.S. Fish and Wildlife Service. 1993. 1993 supplement to list of plant species that occur in wetlands: Northwest (Region 9)**.** Supplement to U.S. Fish & Wildlife Service Biological Report 88 (24.9). Online: http://plants.usda.gov/wetinfo.html

13. Annual Monitoring Report. Annual Monitoring Reports shall be submitted to the CPM and BLM and shall include, at a minimum: a) names and contact information for the responsible parties and monitoring personnel; b) summaries of the results of the monitoring as required in **Soil&Water-4 and Soil&Water-6**; c) piezometer monitoring results**,** and a comparison of predicted versus actual water table declines; d) summary of the results of vegetation, groundwater, and soil monitoring data compared to the baseline data for each plot (pre- versus post-disturbance comparison); e) description of sampling and monitoring techniques used for each attribute; f) description of the data management and statistical analysis; g) photos; h) conclusions and recommendations for remedial action, if the monitoring data indicates that the threshold described below has been met.

    The first Annual Monitoring Report shall include an appropriate statistical analysis using the first year baseline monitoring data to assess whether the sampling design was adequate to provide statistically meaningful data, as described above. If warranted, the first year Annual Monitoring Report shall include recommendations for revisions to the Plan based on this analysis.

14. Threshold for Remedial Action: The Project owner shall implement remedial action, as described in Condition of Certification **BIO-24,** if the monitoring described in **BIO-23** detects a decline in plant vigor of 20 percent or more compared to the same plots pre-disturbance AND also detects a decline in the alluvial (shallow) aquifer confirmed by two consecutive annual water monitoring events in any amount greater than the lowest baseline water level as measured prior to groundwater pumping. If regional drought, off-site pumping or other activities unrelated to the Project are also contributing to the decline in water table, the Project owner shall only be responsible for the portion of the effect that can be statistically demonstrated to be the result of Project pumping. To determine whether declines in plant vigor are related to Project pumping as opposed to region wide drought or offsite pumping conditions the Project owner shall install a network background monitoring piezometers and incorporate these data in the assessment of Project-related effects on GDEs.

15. To understand the source of the water for the GDEs, the Project owner shall prepare a groundwater investigation work plan for submittal to the CPM that will outline steps to determine if the source of water for the GDEs is a shallow perched water-bearing zone rather than the regional groundwater system, and that the shallow perched water-bearing zone is not hydraulically connected to the regional groundwater system. The groundwater investigation will be comprised of the following components:

    a. A continuous soil coring program at five locations to be identified based on field mapping of GDEs in the area shown on the Figure *Soil and Water*-14 within the 0.1-foot drawdown polygon of the Model Predicted Drawdown. One of the five borings will be drilled adjacent to a GDE containing mesquite, and the other four located to provide an

assessment of the range of plant communities within GDEs in the area of interest (i.e., to assess the variability of GDE plant type water requirements and root zone depth).

b. The soil cores shall extend a minimum of 20 feet below the deepest root zones of the GDEs investigated to demonstrate separation between the shallow and regional water zones. At a minimum the soil cores shall show that 20 feet of unsaturated conditions are present below the deepest root zones of the plant communities investigated. The soil cores will be logged by a professional geologist in the State of California, and the coring program will be overseen by a qualified biologist with experienced in the plant communities identified within each GDE.

c. A sampling plan for selective analysis of soil moisture content and saturation will also be conducted for each soil core advanced adjacent to a GDE. The number and frequency of soil samples shall be established to confirm field observations of soil moisture content in the shallow water-bearing zone, through the root zone and in the deeper sediments below the root zone above the regional water table. Soil samples shall be analyzed for moisture content after ASTM Method D2216.

d. Depending on the results of the soil coring program, piezometers may be installed as monitoring points for the regional water table and to monitoring changes in the shallow water-bearing zone from Project pumping. In the report of results from the soil coring program, a water-level monitoring program shall be proposed if it is shown that the regional water table is in direct hydraulic connection to the source of water to the GDE's. If the field data clearly shows an unsaturated zone of 20 feet or more below the deepest root zones of the GDEs, then piezometers will not be installed.

If the results of the pre-construction field observations and soil sampling demonstrate 20 feet or more of unsaturated sediments between the deepest root zones of the GDEs and the regional water table, there will be no requirements to implement any of the underlying conditions as provided for in **BIO-23** and **BIO-24**, as sufficient evidence will have been provided to demonstrate that the groundwater is not the source for the GDE's.

If the refined modeling of the predicted groundwater drawdown and zone of influence after two years of data collection (following the start of groundwater production), as described in Subsection 6 of this condition and in **SOIL&WATER-4** and **SOIL&WATER-6**, indicates the drawdown or zone of influence would be greater than predicted in the Project owner's Groundwater Resources Investigation (GRI), and the GDE are found to be drawing groundwater that is hydraulically connected to the regional groundwater system, then the project owner will submit a revised monitoring plan for GDE areas outside of the original monitoring area .

Verification: At least 30 days prior to operation of project pumping wells, the Project owner shall submit to the CPM and BLM for review and approval a draft Groundwater-Dependent Vegetation Monitoring Plan (Plan). The final plan shall incorporate recommendations from the peer review and shall be submitted to the CPM and BLM no less than 15 days prior to the start of groundwater pumping.

No less than 15 days prior to the start of groundwater pumping the Project owner shall submit as-built drawings indicating the location and depth of piezometers, and shall provide evidence that the piezometers are operational.

Baseline groundwater and groundwater-dependent vegetation monitoring shall begin 15 days prior to construction and shall occur every year during the same one to two week time period in early spring (March) and post-monsoon (September).

The First Annual Monitoring Report shall be provided to the CPM and BLM no later than January 31 following the first year of data collection, and shall include an assessment of whether the sampling design would provide statistically adequate monitoring data and whether modifications to the monitoring design would be needed. If the first Annual Monitoring Report recommends a revised sampling design, the Project owner shall submit the revised Plan to the CPM and BLM no later than March 1.

Thereafter the Project owner shall submit a Groundwater-Dependent Vegetation Annual Monitoring Report to the CPM and BLM no later than January 31 of each year for the duration of Project operation.

If the project owner elects to prepare a geologic and groundwater investigation (as described in Subsection 15 a-d of this condition) to determine if the source of water for the GDEs is a shallow perched water-bearing zone rather than the regional groundwater system, and that the shallow perched water-bearing zone is not hydraulically connected to the regional groundwater system that the Project owner proposes to use for water supply, the project owner shall submit the resumes of at least two independent, qualified peer reviewers 45 days prior to submittal of the report to the CPM and BLM for review and approval. The Project owner must submit the results of their investigation, subject to review and approval by the CPM, prior to the start of construction or Project groundwater use.

If the refined modeling conducted according subsection 6 of this condition indicates that the drawdown and zone of influence is greater than the effect predicted in the GRI, and the GDE are found to be drawing groundwater that is hydraulically connected to the regional groundwater system, then the Project owner shall submit a revised monitoring plan for GDE areas outside of the original monitoring area. The Revised Monitoring Plan shall be submitted no later than January 31 in the third year following the start of groundwater pumping and well monitoring.

REMEDIAL ACTION AND COMPENSATION FOR ADVERSE EFFECTS TO GROUNDWATER-DEPENDENT BIOLOGICAL RESOURCES

BIO-24 If monitoring detects Project-related adverse impacts to groundwater dependent ecosystems (GDEs), as described in **BIO-23** and the impacts are shown to be the result of a decline in the regional groundwater table due to

Project pumping, the Project owner shall determine which well(s) are the source of the adverse impacts and shall implement remedial measures as outlined below. If regional drought, off-site pumping or other activities unrelated to the Project are also contributing to the decline in water table, the Project owner shall only be responsible for the portion of the effect that can be demonstrated to be the result of Project pumping. The remedial measures shall be implemented with the objective of restoring the groundwater levels to the baseline described in **BIO-23**, and shall compensate for impacts to GDEs with off-site habitat acquisition or restoration. The Project owner shall do all of the following:

1. Modification and/or Cessation of Pumping: The Project owner shall provide to the CPM evidence based on groundwater monitoring and modeling indicating which wells are likely to be causing adverse impacts to GDEs. The Project owner shall initially modify operation of those wells to reduce the offsite drawdown in the areas of the GDEs.

2. Remedial Action Plan: The objective of remedial action shall be restoration of the spring groundwater table in the alluvial (shallow) aquifer to baseline levels, as described in **BIO-23**. The Remedial Action Plan shall include one or more of the following measures: 1) Begin rotational operation of the site water supply wells reducing pumping in wells that are the most proximal to the GDEs, 2) reducing the pumping rate in the wells that have been identified as the cause of the drawdown in the area of the GDEs, 3) focus pumping on wells on the southern portion of the project site away from the GDEs 4) cease operation of the well(s) that are the cause of the drawdown. Groundwater water level monitoring shall increase to a frequency necessary to document change and recovery in the drawdown from the changes in the pumping program.

   The Remedial Action Plan shall include a water level monitoring program of sufficient frequency to document changes in operation of the water supply wells, and demonstrate that the water table has been restored to baseline levels.

   The Project owner shall use the following guidelines for determining if an ecosystem (or species) is phreatophytic (Brown et al 2007; LeMaitre et al 1999; Froend & Loomes 2004):

   a. It is not known or documented to depend on groundwater, based on scientific literature or expert opinion (local knowledge can be useful in making a determination as some species' dependence varies by setting);

   b. The species are not known to have roots extending over a meter in depth;

   c. The community does not occur in an area where the water table is known to be 'near' the surface (relative to the documented rooting depths of the species);

d. The herbaceous or shrub vegetation is not still green and/or does not have a high leaf area late in the dry season (compared to other dry areas in the same watershed that do not have access to groundwater).

3. Compensate for Loss of Ecosystem Function. If the decline in the water table in the alluvial (shallow) aquifer is accompanied by a corresponding decline in plant vigor greater than 20 percent (as described in BIO-23), the Project owner shall compensate for the loss of habitat functions and values in the affected groundwater-dependent ecosystems. The amount of compensation shall be at a 3:1 ratio based on area of affected area, using mapping as described in **BIO-23**. The Project owner shall acquire, in fee or in easement, a parcel or parcels of land that include an amount of groundwater-dependent vegetation that is of the same habitat-type as the community affected (e.g., mesquite woodland, alkali sink scrubs, or microphyll woodland) and of an equal or greater habitat quality. The compensation lands shall be located within the watersheds encompassing the Chuckwalla or Palen valleys. As an alternative to habitat compensation, the Project owner may submit a plan that achieves restoration of lost habitat function and value at another location within the Chuckwalla Groundwater Basin that contains the same habitats as those affected.

   a. Review and Approval of Compensation Lands Prior to Acquisition or Restoration. The Project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands in relation to the criteria listed above. Approval from the CPM shall be required for acquisition of all compensatory mitigation parcels.

   b. Preparation of Management Plan: The Project owner shall submit to the CPM and CDFW a draft Management Plan that reflects site-specific enhancement measures for the acquired compensation lands. The objective of the Management Plan shall be to maintain the functions and values of the acquired GDE plant communities and may include enhancement actions such as weed control, fencing to exclude livestock, or erosion control.

   c. Delegation of Acquisition. The responsibility for acquisition of compensation lands may be delegated to a third party~~,~~ such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission. Such delegation shall be subject to approval by the CPM prior to land acquisition, enhancement or management activities.

Verification: No more than 30 days following submission of the Groundwater Dependent Vegetation Annual Monitoring Report the Project owner shall submit to the CPM for review and approval a draft Remedial Action Plan if that report indicates that the threshold for remedial action as described in **BIO-23** has been met. At the same time the Project owner shall submit written evidence that the Project wells responsible

for impacts to groundwater levels and GDEs have modified their operation or ceased operation.

A final Remedial Action Plan shall be submitted to the CPM within 30 days of receipt of the CPM's comments on the draft plan. No later than 6 months following approval of the final Remedial Action Plan, the Project owner shall provide to the CPM written documentation of the effectiveness of the completed remedial action.

No more than 30 days following submission of the Groundwater-Dependent Vegetation Annual Monitoring Report**,** the Project owner shall provide to the CPM a final accounting of the amount of GDE habitat affected by Project groundwater pumping.

No more than 6 months following submission of the Groundwater-Dependent Vegetation Annual Monitoring Report the Project owner shall submit a formal acquisition or restoration proposal to the CPM, describing the mitigation parcels intended for purchase or restoration. The acquisition/restoration proposal shall describe how the proposed parcels meet the acquisition or restoration criteria described in this condition.

No fewer than 90 days prior to compensatory acquisition or restoration, the Project owner shall submit to the CPM and obtain CPM approval of any agreements to delegate land acquisition to an approved third party, or to manage compensation lands; such agreement shall be executed and implemented no more than months following approval of the acquisition proposal.

The Project owner shall provide written verification to the CPM that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient no later than 18 months from submission of the Groundwater-Dependent Vegetation Annual Monitoring Report.

EVAPORATION POND NETTING AND MONITORING

BIO-26 The Project owner shall cover the evaporation ponds prior to any discharge with 1.5-inch mesh netting designed to exclude birds and other wildlife from drinking or landing on the water of the ponds. Netting with mesh sizes other than 1.5-inches may be installed if approved by the CPM in consultation with CDFW and USFWS. The netted ponds shall be monitored regularly to verify that the netting remains intact, is fulfilling its function in excluding birds and other wildlife from the ponds, and does not pose an entanglement threat to birds and other wildlife. The ponds shall include a visual deterrent in addition to the netting, and the pond shall be designed such that the netting shall never contact the water. Monitoring of the evaporation ponds shall include the following:

1. Monthly Monitoring. The Designated Biologist or Biological Monitor shall regularly survey the ponds at least once per month starting with the first month of operation of the evaporation ponds. The purpose of the surveys shall be to determine if the netted ponds are effective in excluding birds, if the nets pose an entrapment hazard to birds and wildlife, and to assess the structural integrity of the nets. The monthly survey shall be conducted in 1 day for a minimum of 2 hours following sunrise (i.e., dawn), a

minimum of 1 hour mid-day (i.e., 1100 to 1300), and a minimum of 2 hours preceding sunset (i.e., dusk) in order to provide an accurate assessment of bird and wildlife use of the ponds during all seasons. Surveyors shall be experienced with bird identification and survey techniques. Operations staff at the Project site shall also report finding any dead birds or other wildlife at the evaporation ponds to the Designated Biologist within 1 day of the detection of the carcass. The Designated Biologists shall report any bird or other wildlife deaths or entanglements within 2 days of the discovery to the CPM, CDFW, and USFWS.

2. Dead or Entangled Birds. If dead or entangled birds are detected, the Designated Biologist shall take immediate action to correct the source of mortality or entanglement. The Designated Biologist shall make immediate efforts to contact and consult the CPM, CDFW, and USFWS by phone and electronic communications prior to taking remedial action upon detection of the problem, but the inability to reach these parties shall not delay taking action that would, in the judgment of the Designated Biologist, prevent further mortality of birds or other wildlife at the evaporation ponds.

3. Quarterly Monitoring. If after 12 consecutive monthly site visits no bird or wildlife deaths or entanglements are detected at the evaporation ponds by or reported to the Designated Biologist, monitoring, as described in paragraph 1, can be conducted on a quarterly basis.

4. Biannual Monitoring. If after 12 consecutive quarterly site visits no bird or wildlife deaths or entanglements are detected by or reported to the Designated Biologist and with approval from the CPM, USFWS, and CDFW, future surveys may be reduced to 2 surveys per year, during the spring nesting season and during fall migration. If approved by the CPM, USFWS, and CDFW, monitoring outside the nesting season may be conducted by the Environmental Compliance Manager.

5. Modification of Monitoring Program. CDFW or USFWS may submit a request for modifications to the evaporation pond monitoring program based on information acquired during monitoring, and may also suggest adaptive management measures to remedy any problems that are detected during monitoring or modifications if bird impacts are not observed. Modifications to the evaporation pond monitoring described above and implementation of adaptive management measures shall be made only after approval from the CPM, in consultation with USFWS and CDFW.

Verification: No less than 30 days prior to operation of the evaporation ponds the project owner shall provide to the CPM as-built drawings and photographs of the ponds indicating that the bird exclusion netting has been installed. For the first year of operation the Designated Biologist shall submit quarterly reports to the CPM, BLM, CDFW, and USFWS describing the dates, durations and results of site visits conducted at the evaporation ponds. Thereafter the Designated Biologist shall submit annual monitoring reports with this information. The quarterly and annual reports shall fully describe any bird or wildlife death or entanglements detected during the site visits or at

any other time, and shall describe actions taken to remedy these problems. The annual report shall be submitted to the CPM, BLM, CDFW, and USFWS no later than January 31 of every year for the life of the project.

REVEGETATION & RESTORATION OF TEMPORARILY DISTURBED AREAS

BIO-27 *Staff and the prior project owner agreed to delete this condition.*

IN-LIEU FEE MITIGATION OPTION

BIO-28 The Project owner may choose to satisfy its mitigation obligations by paying an in-lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099. Alternately, the CPM, in conjunction with the BLM, CDFW, and USFWS, may approve the project owner's use of another mitigation program or any other applicable in-lieu fee provision, provided that the Project's in-lieu fee proposal or mitigation program is found by the CPM to the mitigate the impacts identified herein. If the in-lieu fee proposal or mitigation program is found by the CPM, in coordination with the BLM, CDFW, and USFWS to be in compliance, and the Project Owner chooses to satisfy its mitigation obligations through the in-lieu fee, the Project Owner shall provide proof of the in-lieu fee payment to the CPM prior to construction related ground disturbance.

Verification: If electing to use this provision, the Project owner shall notify the CPM that it would like a determination that the Project's in-lieu fee proposal would mitigate for the impacts identified herein. Prior to site mobilization and construction related ground disturbance the Project Owner shall provide proof of the in lieu fee payment to the CPM.

PROJECT CONSTRUCTION PHASING PLAN

BIO-29 The Project Owner shall provide compensatory mitigation for the total Project Disturbance Area and may provide such mitigation in two phases as depicted in Figure 1 (Palen Solar - Construction Phases) in the Supplement No. 1 Petition to Amend dated February 8, 2013 or updated figure provided by project owner and approved by the CPM. For purposes of this condition, the Project Disturbance Area means all lands disturbed in the construction and operation of the Palen Solar Energy Generating System Project or its phases, including all linears and ancillary facilities, as well as undeveloped areas inside the Project's boundaries that would no longer provide viable long-term habitat.

The disturbance area for each project Phase and resource type is provided in **BIO-29** Table 1 below. Mitigation is shown in **BIO-29** Table 2, and mitigation security is shown in **BIO-29 Table 3,** below**.** This table shall be refined prior to the start of each construction phase with the disturbance area adjusted to reflect the final Project footprint for each phase. Prior to initiating each phase of construction the Project owner shall submit the actual construction schedule, a figure depicting the locations of proposed construction and amount of acres to be disturbed. Mitigation acres are calculated based on the compensation requirements for each resource type as described in the above

Conditions of Certification – **BIO-12** (Desert Tortoise), **BIO-20** (Mojave Fringe-toed Lizard), **BIO-18** (Western Burrowing Owl), and **BIO-22** (State Waters). Compensatory mitigation for each phase shall be implemented according to the timing required by each condition.

BIO-29 Table 1. Area of Habitat Type Disturbed by Construction Phase (acres)[1]

Habitat Type	PSEGS Disturbance Area	
	Phase 1	Phase 2
MFTL Habitat		
Stabilized & Partially Stabilized Dunes	0	186.8
Non-Dunes	34.2	1258.2
Indirect Impacts[2]	0	DISPUTED
TOTAL	34.2	1,866
DT Habitat		
DT Habitat - inside critical habitat	172.2	52.2
DT Habitat - outside critical habitat	770.2	2902
DT Indirect Habitat - inside critical habitat	3.7	0
DT Direct Habitat - outside critical habitat	8	39.7
TOTAL[3]	954.1	2993.9
WBO Habitat		
Impacts to 4 WBO[4]	4 WBO	0
TOTAL	4 WBO	0
Jurisdictional Waters (Direct Impact)		
Dry Desert Wash Woodland	17.95	188.5
Unvegetated Ephemeral Dry Wash	10.9	157.3
Subtotal	28.85	345.8
Jurisdictional Waters (Indirect Impact)		
Dry Desert Wash Woodland	0.03	0
Unvegetated Ephemeral Dry Wash	0.04	0.47
Subtotal	0.08	0.47
TOTAL WATERS	28.93	346.27

1 – Sources: PSH Final Comments on the PSA (Palen 2013pp) and Geomorphic Assessment of Sand Transport for the Modified Project (Palen Solar Electric Generating System) (CEC 2013v)

2 –Project owner assumed 39.7 of indirect impacts for private parcel adjacent to project site however staff will provide an independent assessment of indirect impacts. Indirect impacts will be assessed pending results of additional sand transport modeling in the Final Staff Assessment.

3 – Raven Acres subject to the one-time USFWS Regional Raven Management Program fee are equivalent to the total DT Habitat impact acreages.

4 – Impact to burrowing owl may change based on results of additional burrowing owl surveys along proposed modified generation tie-line corridor and new natural gasline corridor.

BIO 29 Table 2. Mitigation by Habitat Type Disturbed by Construction Phase (acres) [1]

Habitat Type	Mitigation Ratio	PSEGS Disturbance Area	
		Phase 1	Phase 2
MFTL Habitat			
Stabilized & Partially Stabilized Dunes	3:1		560.4
Non-Dunes	1:1	34.2	
Indirect Impacts	0.5:1	0	DISPUTED
TOTAL		34.2	2029.1
DT Habitat			
DT Habitat - inside critical habitat [2]	5:1	861	261
DT Habitat - outside critical habitat	1:1	770.2	2902
DT Indirect Habitat - inside critical habitat	5:1	18.50	0
DT Direct Habitat - outside critical habitat	1:1	8	39.7
TOTAL		1657.7	3202.7
WBO Habitat			
Impacts to 4 WBO	19.5 acre/WBO	78	0
TOTAL		78	0
Jurisdictional Waters (Direct Impact)			
Vegetated (Dry Desert Wash Woodland)	3:1	53.9	565.5
Unvegetated Ephemeral Dry Wash	1:1	10.9	157.3
Subtotal		64.8	722.8
Jurisdictional Waters (Indirect Impact)			
Vegetated (Dry Desert Wash Woodland)	1.5:1	0.05	0.00
Unvegetated Ephemeral Dry Wash	0.5:1	0.03	0.24
Subtotal		0.07	0.24
TOTAL WATERS		64.8	723.0

1 – Sources: Palen 2013pp except for indirect impacts to MFTL (2013v)
2 – Impacts to desert tortoise critical habitat are assumed to be within the Phase 1 and Phase 2 Project Disturbance Area.

BIO-29 Table 3. Mitigation Securities by Construction Phase (acres)[1]

Habitat Type	PSEGS Security	
	Phase 1	Phase 2
MFTL Habitat	$85,537	$6,287,168
DT Habitat	$5,116,816	$9,890,864
Raven Fee Impacts[2]	$100,181	$314,360
WBO Habitat	$250,089	$00.00
Jurisdictional Waters	$200,720	$2,232,624
Total	$5,753,343	$18,725,016

1– Securities (aside from Raven fees) based on REAT Biological Resources Mitigation/Compensation Cost Estimate Calculation Table - July 23, 2010 (REAT 2010), adjusted to reflect a 160-acre parcel size estimate. Security does not include authorized entity fees. Security amounts may change based on final Project footprint. The final amount shall be determined by an updated appraisal conducted as described in BIO-12.
2 – Based on U.S. Fish and Wildlife Service Cost Allocation Methodology for Implementation of the Regional Raven Management Plan, dated July 9, 2010 (USFWS 2010b). Fee calculated at $105/acre for direct project impacts.

Verification: The Project owner shall not disturb any area outside of the area that has been approved for that phase of construction and for the previously approved phases of construction.

No less than 30 days prior to the start of desert tortoise clearance surveys for each phase, the Project owner shall submit a description of the proposed construction activities for that phase to CDFW, USFWS and BLM for review and to the CPM for review and approval. The description for each phase shall include the proposed construction schedule, a figure depicting the locations of proposed construction, and amount of acres of each habitat type to be disturbed.

No less than 30 days prior to beginning Project ground-disturbing activities for each phase, the Project owner shall provide the form of Security in accordance with this Condition of Certification in the amounts described in **BIO-29 Table 3.** No later than 7 days prior to beginning Project ground-disturbing activities for each phase, the Project owner shall provide written verification of the actual Security. The Project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of Project ground-disturbing activities for each phase.

HAZARDOUS MATERIALS

SAMPLE CERTIFICATION (Attachment A)

Affidavit of Compliance for Project Owners

I,

_____

(Name of person signing affidavit)(Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

_____

(Company name)

for employment at

_____

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

SAMPLE CERTIFICATION (Attachment B)

Affidavit of Compliance for Contractors

I,

_____

(Name of person signing affidavit)(Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

_____

(Company name)

for contract work at

_____

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

SAMPLE CERTIFICATION (Attachment C)

Affidavit of Compliance for Hazardous Materials Transport Vendors

I,

_____

(Name of person signing affidavit)(Title)

do hereby certify that the below-named company has prepared and implemented security plans in conformity with 49 CFR 172.802 and has conducted employee background investigations in conformity with 49 CFR 172, subparts A and B,

_____

(Company name)

for hazardous materials delivery to

_____

(Project name and location)

as required by the California Energy Commission Decision for the above-named project.

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

NOISE

EXHIBIT 1 - NOISE COMPLAINT RESOLUTION FORM

Palen Solar Electric Generating System
(09-AFC-7C)

NOISE COMPLAINT LOG NUMBER _____

Complainant's name and address:

Phone number: _____

Date complaint received: _____
Time complaint received: _____

Nature of noise complaint:

Definition of problem after investigation by plant personnel:

Date complainant first contacted: _____

Initial noise levels at 3 feet from noise source _____ dBA Date: _____

Initial noise levels at complainant's property: _____ dBA Date: _____

Final noise levels at 3 feet from noise source: _____ dBA Date: _____

Final noise levels at complainant's property: _____ dBA Date: _____

Description of corrective measures taken:

Complainant's signature: _____ Date: _____

Approximate installed cost of corrective measures: $ _____
Date installation completed: _____
Date first letter sent to complainant: _____ (copy attached)
Date final letter sent to complainant: _____ (copy attached)

This information is certified to be correct:

Plant Manager's Signature: _____

(Attach additional pages and supporting documentation, as required).

SOIL & WATER RESOURCES

SOIL AND WATER RESOURCES – APPENDIX B

FACTS FOR WASTE DISCHARGE — Palen Solar Holdings, LLC, Owner/Operator, Palen Solar Electric Generating System, Riverside County

1. Palen Solar Holdings, LLC, (the Discharger) is proposing to construct, own and operate a concentrated solar power tower (CSP) electric generating facility and evaporation ponds on land owned by the Bureau of Land Management (BLM). The solar power tower project is proposed by Palen Solar Holdings, LLC (PSH) a company jointly owned by BrightSource Energy and Abengoa Solar, LLC. The project is located in the Chuckwalla Valley along the Interstate 10 corridor (I- 10), east of Desert Center and west of the City of Blythe. The facility is referred to as the Palen Solar Electric Generating System (PSEGS or Project). A site map (**Soil and Water Resources Appendix B Figure 1**), as incorporated herein and made a part of these requirements for waste discharge (Waste Discharge Requirements, or WDRs). The address for PSH is 1999 Harrison Street, Suite 2150, Oakland, CA 94612.

2. These WDRs regulate the Facility's two evaporation ponds. The evaporation ponds are designated as Class II Surface Impoundments Waste Management Units (WMU) and must meet the requirements of the California Code of Regulations (CCRs), Title 27, CCR §20200 et seq. The boundaries of the PSEGS are shown on (**Soil and Water Resources Appendix B Figure 2**), as incorporated herein and made a part of these WDRs.

3. The Discharger submitted one Report of Waste Discharge (ROWD) on May 25, 2010 for the evaporation ponds for the PSEGS.

4. Definition of terms used in these WDRs:

   a. **Facility** – The entire parcel of property where the proposed PSEGS industrial operation or related solar industrial activities are conducted.

   b. **Waste Management Units (WMUs)** – The area of land, or the portions of the Facility where wastes are discharged. The evaporation ponds are WMUs.

   c. **Discharger** – The term Discharger means any person who discharges waste that could affect the quality of the waters of the State, and includes any person who owns the land, WMU or who is responsible for the operation of a WMU. Specifically, the terms "discharger" or "dischargers" in these WDRs means PSH.

Facility Location

5. The Facility site is located approximately 0.5 mile north of I-10 and approximately 10 miles east of Desert Center, in an unincorporated area of eastern Riverside County, California (**Soil and Water Resources Appendix B Figure 1**). Desert Center (population 125) is located along I-10 approximately halfway between the cities of Indio and Blythe, California, and is approximately three miles east of the southeast end of Joshua Tree National Park. The area inside the Project's security fence, the

footprint within which all Project facilities will be located, will occupy approximately 2,970 acres of Federal land managed by the BLM.

Surrounding Land Use

6. The Project site lies on 2,970 acres of vacant undeveloped desert located approximately 0.5 mile north of I-10 and 12 miles east of the small rural community of Desert Center. The Project site is not located in a designated wilderness area; however, it is located near lands that are designated as wilderness lands or Areas of Critical Environmental Concern (ACEC) (NECO Maps 2-38 and 2-4). The nearest Federal wilderness areas are located in mountainous land to the northeast and south of the Project site and referred to as the Palen/McCoy and Chuckwalla Mountains, respectively. The Chuckwalla Mountains are also designated by BLM as a Desert Wildlife Management Areas (DWMA); the Chuckwalla DWMA is located less than one mile south of the site and south of I-10. The Palen Dry Lake and dunes, located to the northeast of the Project site, are designated as ACEC. The edge of designated desert tortoise critical habitat extends into approximately 180 acres of the southwestern portion of the Facility.

7. South of I-10 is undeveloped public and private desert land. Undeveloped and irrigated desert is located west of the site where several large parcels are actively farmed. The nearest residence is located approximately 25 feet north of the Project's ROW boundary and approximately 1,000 feet from Unit #2. One other residence is located approximately 3,500 feet north of the Project boundary. No other residences are known to exist within the one-mile radius of the Project site.

8. The Project site is vegetated with desert scrub throughout and includes some sand dunes in the northeast. Several dirt roads and transmission lines cross the Project site, as well as four desert northeast-southwest trending washes. Based on information in Northern and Eastern Colorado Desert (NECO) Plan, the Project site has not been leased for grazing by BLM. The nearest grazing lands are the Ford Dry Lake grazing allotment approximately 10 miles east of the site and north of I-10.

9. The site is currently undeveloped and few off-highway vehicle tracks were observed. The site does not appear to be frequented as a recreational area. No portion of the Facility is known to be an active recreational area.

10. The NECO Plan does not identify any scenic resources in the Project Study Area. The County of Riverside has identified the I-10 corridor as eligible for county designation as a scenic corridor. The I-10 corridor between Palm Springs and Blythe is not designated by the State of California as a scenic corridor.

Facility Description

11. The PSEGS is comprised of two, nominally rated 250 MW power blocks. The performance of each power block will vary with solar radiation and ambient temperature levels. At optimal solar radiation and low air cooled condenser back pressure (low ambient temperatures), the steam turbine-generator can produce 272 MW gross. As ambient temperature increases, the cooling effectiveness of the air cooled condenser decreases, causing the back pressure on the steam turbine to rise

and, correspondingly, lowering steam turbine output. Parasitic loads also vary in relation to ambient temperature, due to the increasing power requirement for the large air cooled condenser and cooling plant auxiliary equipment. At an ambient temperature of 96°F, the steam turbine generator will produce 264 MW and plant parasitic load will be approximately 29 MW providing a net-to-grid power block rating of approximately 235 MW. Conversely, on a cool winter day with optimal solar radiation, the steam turbine generator will produce 272 MW, plant parasitic load will be approximately 28 MW and the net-to-grid power block rating will be approximately 244 MW.

12. The Project proposes to use dry cooling condenser for power plant cooling. Water for cooling tower makeup, process water makeup, and other industrial uses such as mirror washing will be supplied up to ten onsite wells. This source will also be used to supply water for employee use (e.g., drinking, showers, sinks, and toilets). Water received from the on-site wells will be pumped directly to a reverse osmosis (RO) treatment unit to meet the requirements of the California Department of Health Services for potable water supplies. Power cycle makeup, mirror washing water, and cooling of ancillary equipment will require on-site treatment for reduction of dissolved solids, and this treatment varies according to the quality required for each of these uses.

13. The power generation cycle will not produce cooling tower blow down because the plant will be dry cooled. A small auxiliary cooling tower will generate a small amount of blow down, which will be reused on-site. No off-site backup cooling water supply is planned at this time.

14. The main waste stream at the site consists of industrial wastewater generated in the various processes associated with power generation. Industrial wastewater is treated via a high pH reverse osmosis at each of the two Power Units. At each Unit, the treated water is recycled to the 800,000-gallon Service/Fire Water tank for reuse in the process. The concentrate from the RO system is discharged to lined evaporation ponds (one per Unit). The PSEGS Facility therefore includes two proposed evaporation ponds for waste storage and disposal. Sanitary wastewater generated at each Unit is disposed of via septic systems.

15. The project will include evaporation ponds for the evaporation of brine waste from the RO plant and other industrial wastes. There will be two ponds, two acres in size and, both located next to the common area (**Soil and Water Resources Appendix B Figure 2**). The evaporation ponds will be designed in accordance with Colorado River Basin Regional Water Quality Control Board (Regional Board) requirements.

16. The estimated project life for the Project is 30 years. Personnel will staff the Project 24 hours per day/seven days per week. Even when the solar power plant is not operating, personnel will be present as necessary for maintenance, to prepare the Project for startup, and/or for site security.

17. A sanitary septic system and on-site leach field will be used to dispose of sanitary wastewater within each power block.

Climate

18. The Project is located in an arid desert climate; therefore, there are extreme daily temperature changes, low annual precipitation, strong seasonal winds and mostly clear skies. Evaporation rates are higher than precipitation rates. Based on 60 years of data from Blythe Airport, the mean maximum temperatures in June to September exceed 100°F. Winter months are more moderate with mean maximum temperatures of high 60's to low 70's °F and minimum temperatures in the low to mid 40's °F. Although there are no average minimal temperatures below freezing point (32°F), the temperature has historically dropped below freezing point between November and March.

19. Average annual evaporation in the Facility area, based on published data at the Indio Fire Station 70 miles west of the Project site, is 105 inches, of which 87 percent of that evaporation occurs between March and October. Average annual precipitation in the Project area, based on the gauging station at Blythe Airport, is 3.55 inches, with August recording the highest monthly average of 0.63 inches and June recording the lowest monthly average of 0.02 inches. Per the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 for the Southern California area, 3.51 inches of rainfall shall fall in the 100 year, 24 hour storm event.

20. Winds in the Project area are generally south to southwest with a less frequent component of northerly winds (north through northwest). Calm conditions occur approximately 16.43% of the time, with the annual average wind speed being approximately 7.62 miles per hour (mph) (3.41 m/s).

Regional Topography and Drainage

21. The Project site is located on the alluvial sediments of the Chuckwalla Valley, and is 2 to 3 miles northeast of the Chuckwalla Mountains and approximately two miles southwest of the Palen Mountains. Surface water in the Chuckwalla Valley drains from the surrounding mountains toward Palen or Ford Dry Lakes (playas), the topographic low points within the valley.

22. Site topography slopes gently to the northeast at grades of 1.4 percent or less. The general storm water flow pattern is from the higher elevations in the Chuckwalla Mountains, located approximately 6 miles southwest of the site, to the lower elevations in Chuckwalla Valley to the northeast. The site is mostly flat, with elevation ranging on United States Geological Survey (USGS) topographical maps from a high of about 625 feet above sea level at the southwestern limits of the site to a low of about 425 feet above sea level along the eastern site boundary. Storm water from the Project site flows to the northeast across the site and then southeast to a dry lake bed (Ford Dry Lake), which also receives overland flow from the Palen Mountains and the area toward I-10.

23. The major watercourse in the Project area is Corn Springs Wash, which drains approximately 31 square miles of the Chuckwalla Mountains and flows northeast toward the Project site. Storm water flows and discharge from springs in the Chuckwalla Mountains travel through Corn Springs Wash and adjacent unnamed washes northeastward before being cut off by I-10. Storm water flows are

intercepted by dikes located south of I-10 and conveyed to three box culverts that cut beneath the roadway of I-10, south (upgradient) of the Project site. These structures were constructed during construction of I-10 and are dikes and culverts that re-concentrate the flows back to three discrete discharge points on the north side of I-10. From these discharge points, storm water flows continue across the Project site flowing northeast towards Palen Mountains.

24. Impacts to the ephemeral washes within the Project site will be mitigated by rerouting the washes in two new channels around the east and west sides of the facility and one through the center of the site (between Units #1 and #2). The new channels will be designed to be wildlife friendly, and drainage downstream of the site maintained as close as practicable to the pre-existing conditions. Storm Water Pollution Prevention Plans (SWPPP) and a CEC mandated Drainage, Erosion, and Sediment Control Plan (DESCP) were provided in the August 2009 PSPP Application for Certification and contain Best Management Practices (BMPs), which will be implemented to avoid significant drainage/stormwater runoff and water quality impacts.

Flood Hazard

25. According to FEMA, no flood insurance rate maps have been created for the Project site and adjacent areas. Reviews of flood zone maps generated by the Riverside County Flood Control District also did not identify any flood zone maps for this area of Riverside County.

Regional Geology

26. The Facility is located in the northwestern Colorado Desert, in the alluvial-filled basin of the Palo Verde Mesa, which is part of the greater Colorado Desert Geomorphic Province. The basin is bound by the McCoy Mountains to the west, the Little Maria Mountains to the northwest, and the Big Maria Mountains to the northeast. This area has a generally low relief until near the surrounding mountains. In the region, the Palo Verde Valley is roughly equivalent to the recent historic floodplain of the Colorado River. Surficial deposits of late Miocene to Holocene age form most of the land surface in the area. Most of these deposits are composed of Quaternary Alluvium, underlain by the Pliocene Bouse Formation, which is in turn unconformably underlain by the Miocene Fanglomerate. These deposits are all underlain by bedrock consisting of metamorphic and igneous intrusive rocks of pre-Tertiary age, including Proterozoic schist and gneiss, Paleozoic sedimentary rocks, and Mesozoic sedimentary and metavolcanic rock sequences.

Site Specific Geology

27. The Project is located in the alluvial-filled basin of the Chuckwalla Valley. Regionally, this valley formed as a structural depression or a pull-apart basin and is composed of two broad geologic units: consolidated rocks and unconsolidated alluvium (DWR 1963, 1979). The consolidated rocks consist of pre-Tertiary age igneous and metamorphic rocks, which form the basement complex, and in some locations, Tertiary-age volcanic rocks that overlie the basement complex. The consolidated rocks are nearly impermeable except for areas where fracturing or weathering has occurred. It is uncertain the extent that these rocks yield water to the alluvium. Some

literature indicates that the fractured bedrock is in communication with the alluvium and there are wells that are completed in the bedrock that yield sufficient quantities of water. The flux of groundwater into and out of the bedrock is unknown.

Seismicity

28. The Project site is located in seismically active Southern California, a region that has experienced numerous earthquakes in the past. A review of the Alquist Priolo (AP) Earthquake Fault Maps and the Riverside County AP Earthquake Hazard Zone Map indicate that there are no AP fault zones present within the Project boundaries (California Division of Mines and Geology 2000, California Geological Survey 2003, 2007). In addition, no active fault zones are present within one mile of the Project site; however, the site is approximately 2.5 miles southwest of an unnamed fault located at the southern end of the Palen Mountains. This fault has not been mapped by the USGS as a Quaternary (sufficiently active) fault, and is not listed by the EQFAULT program as a fault potentially affecting the site (Blake 2000).

29. Regardless of whether there are faults across the site, because the Project is located in a seismically active area, all Project structures must be designed to comply with the California Building Code (CBC) and Universal Building Code (UBC) Zone 4 requirements. The CBC and UBC are considered to be standard safeguards against major structural failures and loss of life. The goals of the codes are to provide structures that will:

    a. Resist minor earthquakes without damage;

    b. Resist moderate earthquakes without structural damage but with some nonstructural damage; and

    c. Resist major earthquakes without collapse but with some structural and nonstructural damage.

30. The CBC and UBC base seismic design on minimum lateral seismic forces ("ground shaking"). The CBC and UBC requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes.

31. The Project site is located in seismically active Southern California, a region that has experienced numerous earthquakes in the past. A review of the Alquist Priolo (AP) Earthquake Fault Maps and the Riverside County AP Earthquake Hazard Zone Map indicate that there are no AP fault zones present within the Project boundaries (California Division of Mines and Geology 2000, California Geological Survey 2003, 2007).

Ground Rupture

32. The Project site is not located within a State of California Earthquake Fault Zone designated by the Alquist-Priolo Special Studies Zone Act of 1972 (formerly known as a Special Studies Zone), an area where the potential for fault rupture is considered probable (Riverside County, 2008). In addition, no Quaternary,

Sufficiently Active, or Well Defined Faults are located under or near the Site. Based on this information and engineering judgment, earthquake induced ground rupture is not considered to be a significant hazard at the Site.

Slope Stability

33. The Project site is not considered to be an area with the potential for permanent ground displacement due to earthquake-induced landslides because surface topography at and near the site is relatively flat (Riverside County, 2008). A review of the Riverside County General Plan, Safety Element, did indicate areas considered susceptible to earthquake induced landslides and rock falls in the McCoy Mountains; however, these areas are several miles from the Site and are not expected to impact the Project. Based on this information and engineering judgment, slope instability is not considered to be a significant hazard at the Site.

Erosion

34. Erosion is the displacement of solids (soil, mud, rock, and other particles) by wind, water, or ice and by downward or down-slope movement in response to gravity. Due to generally flat terrain, the Project site is not prone to significant mass wasting (gravity-driven erosion and non-fluvial sediment transport) at present. The Riverside County General Plan, Safety Element (Riverside County, 2008), indicates the Site is in an area with moderate potential for wind erosion, the off-site linears are in areas with moderate to high potential for wind erosion. Soil characteristics at the Project site allow for the potential for wind and water erosion, and significant sediment transport currently occurs across the valley axial drainage that crosses the majority of the proposed plant site. As indicated above, these valley axial deposits are characterized by subdued bar and swale topography and ongoing deposition from sheet floods. Limited sand and aeolian erosion also occurs between depositional episodes.

35. To address the management of sediment transport, erosion and sedimentation during operation, the project design will incorporate diversion berms, channels, and dispersion structures. The final design for these features will be developed during detailed design, and will include industry-standard calculations and modeling to reduce the potential for erosion or sedimentation, and to reduce the need for ongoing maintenance. Dirt roads and exposed surfaces will be periodically treated with dust palliatives as needed to reduce wind erosion. Construction and maintenance of the proposed drainage and sediment management system at the Site is expected to reduce water and wind erosion at and downstream of the Site to less than significant levels.

Liquefaction

36. Liquefaction is a soil condition in which seismically induced ground motion causes an increase in soil water pressure in saturated, loose, uniformly-graded sands, resulting in loss of soil shear strength. As a result, the effects of liquefaction can include loss of bearing strength, differential settlement, ground oscillations, lateral spreading, and flow failures or slumping. Liquefaction occurs primarily in areas where the groundwater table is within approximately 50 feet of the surface (Riverside County, 2008). The depth to water beneath the Site is estimated to be approximately

195 feet bgs. In addition, the sandy soils encountered in the upper 100 feet beneath the Project site during geotechnical drilling are generally dense and well graded. Dense, well-graded sands are not generally considered susceptible to liquefaction. Based on this information and engineering judgment, the potential for liquefaction hazard at the Project site is considered to be low. The potential for liquefaction will be further evaluated as part of the Final Geotechnical Investigation for the Project, and if necessary, design parameters to address identified conditions will be incorporated into the detailed project design.

Differential Settlement

37. Seismically induced settlement can occur during moderate and large earthquakes in soft or loose, natural or fill soils that are located above the ground water table, resulting in differential settlement. The settlement can cause damage to surface and near-surface structures. The most susceptible soils are clean loose granular soils. Due to the expected dense to very dense nature of the near surface soils, the potential for damage due to seismically induced settlement is considered to be low at the Project site. The potential for seismically-induced settlement will be further evaluated as part of the Final Geotechnical Investigation for the Project, and if necessary, design parameters to address identified conditions will be incorporated into the detailed project design.

Collapsible Soil Conditions

38. Alluvial soils in arid and semi-arid environments can have characteristics that make them prone to collapse with increase in moisture content and without increase in external loads. Soils that are especially susceptible to collapse or hydrocompaction in a desert environment are loose dry sands and silts, and soils that contain a significant fraction of water soluble salts. Overall soil gradation observed at the Facility site trended from coarser- to finer-grained alluvial deposits as distance from the McCoy Mountains increased. The ground surface in the western portion of the Project site is dominated by areas of desert pavement with layers of flat-lying gravel overlying finer-grained sandy materials. East toward Black Creek road, the surface becomes less dominated by desert pavement and becomes sandier. Soils observed at the Facility site have a low permeability and high runoff potential. Based on this data and engineering judgment, the site soils do not have a significant potential for hydrocompaction or collapse. The potential for hydrocompaction and soil collapse will be further evaluated as part of the Final Geotechnical Investigation for the Project, and if necessary, design parameters to address identified conditions will be incorporated into the detailed project design.

Expansive Soil

39. Expansive soil is predominantly fine grained and contains clay minerals capable of absorbing water in their crystal structure. It is often found in areas that were historically a flood plain or lake area, but can also be associated with some types of shale, volcanic ash or other deposits, and can occur in hillside areas also. Expansive soil is subject to swelling and shrinkage, varying in proportion to the amount of moisture present in the soil. As water is initially introduced into the soil (by rainfall or watering) expansion takes place. If dried out, the soil will contract, often leaving small fissures or cracks. Excessive drying and wetting of the soil can progressively

deteriorate structures that are not designed to resist this effect, and can lead to differential settlement under buildings and other improvements. The surficial soils at the site generally consist of predominantly granular soils that do not contain much clay and are not subject to significant expansion hazards. The potential for expansive soils will be further evaluated as part of the Final Geotechnical Investigation for the Project, and if necessary, design parameters to address identified conditions will be incorporated into the detailed project design.

40. Based on the above information, the cut and fill slope dimensions and earthwork requirements will be adequate to address the stability of the evaporation ponds for the life of the Project and no further analysis is warranted.

Regional Hydrogeology

41. The Recent-age (~11,000 years) younger alluvium consists of poorly-sorted gravel, sand, silt, and clay. The younger alluvium overlies the older geologic units as a thin veneer and is believed to be mostly above the water table. The Recent-age playa deposits consist mainly of clay, silt, and sand and occur in Ford and Palen Lakes and Hayfield Reservoir. During recent history, groundwater levels were shallower and groundwater likely discharged to Palen Dry Lake. Regional water level data suggests that water is possibly shallower than 25 feet below Palen Dry Lake, a depth which would suggest water may be lost or discharged through evapotranspiration. Recent groundwater levels below Ford Dry Lake show the water to be about 50 feet below the surface of the lake. At this depth, it is unlikely that water is lost through evapotranspiration. The dune sand deposits occur on the lower elevations of the valley from the northwest end of Chuckwalla Valley to the eastern end of the valley, and just northeast of the Project site.

42. The older alluvium generally consists of fine to coarse sand inter-bedded with gravel, silt, and clay. The color ranges from dark brown to red, with abundant small white caliche nodules. This unit is assumed to be extensive, readily yields water to wells, and is considered the most important aquifer in the Chuckwalla Valley Groundwater Basin. It is believed that saturated sediments below the side to a depth of about 500 feet are older alluvial deposits.

Hydrostratigraphy

43. The Pinto Formation consists of coarse fanglomerate and lacustrine clay with interbedded basalt. The DWR suggests (2004) that this unit yields limited quantities of water. Below the Pinto Formation, the PlioPleistocene Bouse Formation is comprised predominantly of coarse-grained fanglomerate deposits.

44. Well logs were located through reports published by the DWR and through information provided in various reports. There are two wells on the Project site and one has a boring log with lithologic information available in a reported prepared by the DWR. The log for well 5S/17E-33N001 indicated surficial sands were encountered from the ground surface to 102 feet bgs; 18 feet of clay, sand and gravel were encountered from 102 feet to 120 feet bgs; clay was encountered between 120 and 208 feet bgs, sand and gravel were encountered from 208 to 216 feet bgs; clay streaks and sand were encountered from 216 feet to 556 feet bgs; and

sand streaks and “sandstone cappings” were encountered within predominantly fine-grained materials between 556 feet and 758 feet bgs. It is possible that sediments encountered to a depth of 556feet bgs area older alluvial deposits. The log of well 5S/17E-33N001 does not have sufficient detail to readily discern the contact between the units reported for the Chuckwalla Valley Groundwater Basin.

45. Boring logs could be found for only approximately 10 percent of the wells that were identified from an online database and literature within the basin. Available information provided in these logs was used to provide an understanding of subsurface conditions and develop a generalized geologic cross section for the Chuckwalla Valley Groundwater Basin. The limited geologic data revealed general variations in the sediments from the west to the east. In general, very few wells were drilled to the top of the basement or base of the fresh water in the Chuckwalla Valley Groundwater Basin. One well located on the eastern edge of the basin, due west of the gap to the Palo Verde Groundwater Basin, was drilled to a depth of about 1,200 feet bgs, where it encountered bedrock.

46. In general, sediments on the western and eastern portions of the valley, and along the fringes of the basin are comprised of a higher percentage of coarsegrained sediments. These deposits are the proximal facies of coalescing alluvial fans. In the central portion of the valley and below the Project, sediments are generally composed of a much higher percentage of clay with subordinate amount of sand that occurs as layered inter-beds. These deposits have been interpreted as lacustrine deposits in the central portion of the basin. The wells located along the central portion of the valley and shown on the axial cross section through the valley appear to be completed within an inter-bedded sequence of alluvial fan and lacustrine deposits. Shallow sediment encountered below the Project consisted of very fine-grained silty sand and sand, suggesting distal fan facies. Interbedded clay with these sediments is probably lacustrine deposits. While the data is not conclusive these deposits to a depth of 538 feet are probably in the older alluvium.

47. The basal portion of may be upper portions of the Bouse Formation. The deeper Fanglomerate was not encountered and it is likely that the Pinto Formation was also not found below the Project site based on the absence of interbedded basalt deposits.

On-site Drainage

48. On-site storm water management for the completed facility will be provided through the use of source control techniques, site design and treatment control. The storm flows from the solar collector arrays will be treated through the use of swales, and ditches.

49. Locations within the power block for the potential of chemical or oil releases will be fully contained. Rainfall within the containment areas will be allowed to evaporate or will be drained through an oil water separator. Locations within the power block where “contact” storm water may occur will be contained within a system of curbs or trenches. Drains from these curbed areas or containment trenches will be directed to an oil water separator. The oil separated and captured within the oil water separator will be trucked off-site to a licensed disposal/recycling facility. Clean water

discharged from the oil water separator will be used on Project site by discharging it to the cooling tower or to the raw water storage tank. The water discharge from the oil water separator will not be discharged to the storm water system.

Facility Operational Water

50. The Project will be dry cooled. The Project's various water uses include water for solar collector mirror washing, makeup for the SSG feed water, dust control, water for cooling plant auxiliary equipment, potable water and fire protection. Water needs for the Project will be met by use of groundwater pumped from wells on the Project site. The estimated water supply need for the Project operation is approximately 300 acre-feet per year.

Evaporation Ponds (Design and Installation Sequence)

51. The containment strategy for the evaporation ponds is summarized as follows:
    a. Meet or exceed regulatory requirements for containment of waste fluids;
    b. Select materials that are compatible with the physical, chemical and thermal characteristics of the water and contaminated soils being contained;
    c. Protect against physical damage to the containment layers by including protective layers into the designs of each containment facility;
    d. Allow for occasional removal of contained media without otherwise damaging the integrity of the containment systems; and
    e. Include the ability to monitor the integrity of the containment system, to transfer fluids out of permeable layers on a continuous basis, and to transfer fluids from one evaporation pond to another.

52. Each 2.0 acre evaporation pond has a proposed design depth of seven feet which incorporates:
    a. Drying each pond at alternating four year intervals;
    b. 3 feet of operational depth;
    c. 2 foot of sludge build up over 4 years; and
    d. 2 feet of freeboard.

53. The containment design for the evaporation ponds, from the surface of the evaporation ponds downwards, consists of the following:
    a. A hard surface / protective layer;
    b. A primary 60 mil high density polyethylene (HDPE) liner;

c. An interstitial leak detection system (LDS) comprising a drainage layer and piping;

d. A secondary 40 mil HDPE liner;

e. A 2 foot thick compacted silty-sand base; and

f. A moisture detection system.

54. The hard surface / protective layer provides protection against accidental damage to the HDPE liners which could be caused by burrowing animals, falling objects, varying climatic conditions and worker activities. Second, the hard surface / protective layer will allow for occasional removal of the precipitated solids within the evaporation ponds. Various hard surface media such as reinforced concrete, roller compacted concrete, revetments, or combinations of these media will be assessed prior to the selection of the preferred option.

55. High density polyethylene (HDPE) was selected as the preferred fabric for the primary and secondary liners for the following reasons:

a. It is chemically resistant to potentially high concentrations of dissolved salts;

b. It is very durable during installation;

c. It is strong and possesses desirable stress-strain characteristics; and

d. It is the most common synthetic liner material and as such there is a broad base of practical experience associated with the installation of HDPE amongst construction contractors.

56. A 60 mil upper liner was selected to provide appropriate balance between strength and ductility characteristics, which is very important during liner installation. A non-woven geotextile will be installed on top of the 60 mil liner to act primarily as a protective layer. A 40 mil lower liner was selected for the lower and secondary liner to provide slightly better ductility and handling characteristics during installation, as strength is of lesser importance for the secondary liner. HDPE possesses large thermal expansion and contraction characteristics, and exhibits stress when liner temperature exceeds 122 ºF. The temperature of the blowdown water is not expected to exceed 122ºF.

57. A 2 foot thick basal layer of compacted silty sand is included in the design profile to protect the underlying groundwater in the unlikely event that both synthetic liner materials are punctured during construction or operation of the evaporation ponds. This base layer also serves to provide a smooth, competent surface to support the overlying synthetic liners and leak detection system layers.

Leak Detection System

58. A drainage layer is included in the design profile for the evaporation ponds which consists of a granular drainage layer with perforated piping to collect and convey fluids to an extraction riser in a leak detection sump (LDS). Geocomposite drainage materials, consisting of HDPE geonet and nonwoven geotextiles heat bonded to one or both sides, may be used in conjunction with or as a substitute for the granular drainage layer on slopes.

59. The water collected in the LDS will drain by gravity to a unique monitoring well that is constructed for each of the leak collection layer. Automated pneumatic, solar-powered pumping systems are included in the design of each of these monitoring wells to automatically return water to that pond, which in turn minimizes the hydraulic pressures across the secondary liners and therefore the risk of impact to groundwater quality.

60. The base of the evaporation pond leak detection and collection layer will slope at a minimum inclination of 1 percent to a leak collection trench. The trench will contain screened sand (with no fines) and a perforated pipe that will slope at a minimum inclination of 3/4 percent towards a leak detection and collection sump, located at the lowest point in the pond. The water in the collection sump will drain by gravity to a monitoring well that is constructed for each evaporation pond (one well per pond). Automated pneumatic pumping systems in the monitoring wells will automatically return water collected in the sump to that evaporation pond, which in turn minimizes the hydraulic pressures across the secondary liners and, therefore, minimizes the risk of leakage through the secondary liner. Leakage rates will be measured using a flow totalizer.

61. The collection sump, pipe, and monitoring well, will include prefabricated and field-fabricated HDPE components with water tight, extrusion welded and wedge-welded seams and penetrations. The liner system will be installed in accordance with current practices. Destructive and non-destructive testing procedures will be used to verify sump and penetration tightness and continuity.

62. This design is consistent with CCR Title 27, Section 20340, which requires an LDRS between the liners for the evaporation ponds.

63. The side slopes around the evaporation ponds will contain the same liner system as the base of the ponds, except that leak collection pipes will not be located on the pond side slopes.

64. The berms shall be covered with a minimum 6-inch thick road base or approved equivalent. The top of the berms will be a minimum of 2 feet above the surrounding grade to prevent potential inflow of stormwater.

65. The wastewater will come into contact with the hard surface/protective layer. The media for this layer will either be roller-compacted concrete or an approved equivalent alternate. All final media selection will be compatible with the wastewater by using quality concrete with maximum chemical resistance (specifications will be provided to the concrete manufacturer to ensure proper mix selection).

66. If there is leakage in the evaporation pond, the wastewater will come into contact with the primary/secondary liner. HDPE is chemically resistant to saline solutions and long-term contact between the wastewater in the evaporation ponds and the HDPE liner system will not compromise liner integrity.

67. The hard surface/protective layers, liner system, and base layer will have the ability to withstand the dissolved solids content of the water without degradation. These systems will not fail due to pressure gradients from physical contact with the wastewater and residue or undergo chemical reactions or degradation.

68. The containment construction process will follow these general steps:
    a. Prior to construction, the topsoil and subsoil covering the area will be stripped and stockpiled.
    b. Placement and compaction of the silty sand base material;
    c. Installation of the carrier pipe for the moisture detection (neutron probe) system beneath the base of the ponds;
    d. Construction of finish grading to sub grade, as needed, and excavation of the leak collection trench and detection/collection sumps.
    e. Scarification, moisture conditioning, compaction, proof rolling and testing of subgrade materials;
    f. Installation of secondary HDPE liner;
    g. Installation of leak detection layer, sump, and leak extraction risers;
    h. Installation of primary HDPE liner;
    i. Installation of the non-woven geomembrane liner;
    j. Installation of granular fill;
    k. Installation of liner protection layers; and
    l. Hard surface placement.

Waste Classification

69. Wastewater from several processes within the Facility will be piped to one 2.0- acre evaporation ponds per Unit for disposal. The pond area provides sufficient evaporative capacity to dispose of the anticipated wastewater stream, and allows for one pond to be taken out of service for up to approximately eight months for cleaning, potential future maintenance, and repair without impacting the operation of the plant. Raw water for the Facility is supplied from groundwater wells. Discharge into the evaporation ponds is from one source:
    a. High pH RO (Reverse Osmosis Concentrate).

Wastewater Discharge

70. The estimated concentrations of chemical constituents in the wastewater discharge to the evaporation ponds are provided in the **Table 1**, Raw Water Quality and Estimated Chemistry of Wastewater Flows. The total concentrations of chemical constituents estimated in the evaporation pond residue that will accumulate in the ponds during operation are provided in **Table 2**.

71. Classification of wastewater and evaporation pond residue is summarized in the Classification of Wastewater and Evaporation Pond Residue **Table 3** below.

72. Testing of this material will be conducted as part of the facility monitoring program to verify this characterization. The evaporation pond residue accumulated in the ponds is non hazardous; however, it does contain pollutants which could exceed water quality objectives if released, or that could be expected to affect the beneficial uses of waters of the state. Therefore, the evaporation pond residue is classified as a "designated waste."

Evaporation Residue

73. During the 30-year operating life of the Project, about 6,400 tons of evaporites will accumulate in the ponds. However, because it is anticipated that windblown silt will accumulate in the ponds at a rate of perhaps 6 inches per year, it will be necessary to clean out the ponds on approximately four-year intervals. Assuming 2 feet of silt accumulation, the sludge removed from the ponds will be approximately nine percent evaporate and 91 percent silt. The predicted chemical makeup of the evaporite, based on information about the raw water chemistry and knowledge of the water use and treatment processes at the Project, is summarized in **Soil and Water Resources Appendix B Table 3**.

Waste Management

74. A Spill Prevention, Control, and Countermeasure (SPCC) Plan will be developed for the Project (refer to Section 13.4 for details).

Hazardous Waste

75. There will be a variety of chemicals stored and used during construction and operation of the project. The storage, handling, and use of all chemicals will be conducted in accordance with applicable laws, ordinances, regulations, and standards.

76. Hazardous materials will be stored in proper containers in material yards and designated construction areas. Cleanup materials (spill kits) will also be stored in these areas. Fuel, oil, and hydraulic fluids used in on-site vehicles will be transferred directly from a service truck to construction equipment and will not otherwise be stored on-site.

77. Designated, trained service personnel will perform fueling either prior to the start of the workday or at completion of the workday. Service personnel and construction contractors will follow SOPs for filling and servicing construction equipment and vehicles.

78. The evaporation ponds will not contain hazardous wastewater or sludge as it is illegal to discharge hazardous waste into surface impoundments under the Toxic Pits Cleanup Act of 1984.

Basin Plan

79. The Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan) was adopted on November 17, 1993, and designates the beneficial uses of ground and surface water in this Region.

80. The Basin Plan designates beneficial uses for surface waters in each watershed of the Colorado River Basin region. Beneficial uses of surface waters within the Facility area and vicinity that could be impacted by the Facility include:

    a. Agricultural use

    b. Municipal use

    c. Industrial use

    d. Recreational use

    e. Groundwater recharge

    f. Wildlife habitat

    g. Preservation of Rare, Threatened, or Endangered Species

81. The beneficial uses of ground water in the Imperial Hydrological Unit are:

    a. Municipal Supply (MUN)

    b. Industrial Supply (IND)

    c. Agricultural supply

Monitoring Parameters

82. Based on the chemical characteristics of the projected discharges to the evaporation ponds from wastewater, the following list of monitoring parameters are required. These specific parameters are selected because they provide the best distinction between the wastewater and the groundwater in the Project area that can be used to differentiate a potential release that could change the chemical composition of the groundwater.

    a. Cations: Antimony, Arsenic, Barium, Cadmium, Calcium, Total Chromium, Cobalt, Copper, Lead, Mercury, Nickel, Selenium, Zinc;

    b. Anions: Chloride and Sulfate; and

    c. Other: Total Dissolved Solids, Specific Conductivity, and pH.

California Environmental Quality Act (CEQA)

83. The California Energy Commission (CEC) is the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) for all thermal power plants with power ratings of 50 MW or more. The CEC's power plant licensing process is a CEQA-equivalent process. The CEC will coordinate reviews and approvals with the regulatory agencies to ensure that the proposed project meets CEQA requirements. This includes obtaining these WDRs from the staff of the Regional Board. The CEC will certify this project and will include these WDRs as conditions of certification in accordance with the Warren-Alquist Act.[1]

Monitoring and Reporting Program

84. The monitoring and reporting requirements in the Monitoring and Reporting Program (Appendix D), and the requirement to install groundwater monitoring wells, are necessary to determine compliance with these WDRs, and to determine the Facility's impacts, if any, on receiving water. All technical reports require the signature of a California Registered Professional Engineer or Professional Geologist.

[1] The Warren-Alquist State Energy Resources Conservation and Development Act is the authorizing legislation for the California Energy Commission. The Act is codified at Public Resources Code (PRC) Section 25000 et seq.. PRC Section 25500 establishes the Commission's authority to certify all sites and related facilities for thermal power plants with power ratings of 50 megawatts or more. The section further declares that "the issuance of a certificate by the commission shall be in lieu of any permit, certificate, or similar document required by any state, local or regional agency, or federal agency to the extent permitted by federal law, for such use of the site and related facilities, and shall supersede any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law."

Soil and Water Resources Appendix B Table 1 – Raw Water Quality and Estimated Chemistry of Wastewater Streams

	Supply Water[1]	Wastewater to Evaporation Pond[2]	STCL[3]	TCLP[4]
24-Average Flow Rate (GPM)	**63**	**4.23**	**--**	**--**
Peak Operation Flow Rate (GPM)	**97**		**--**	**--**
Constituent	**(mg/L)**			
Cations				
Calcium	31	3,000	--	--
Magnesium	4.7	640	--	--
Sodium	352	20,500	--	--
Potassium	4	370	--	--
Ammonia	< 0.1			
Anions				
M-Alkinity			--	--
Sulfate	380	15,000	--	--
Chloride	200	25,000	--	--
Nitrate	0,7	0.15	--	--
Silicon Dioxide		1,200	--	--
General Water Quality				
Bicarbonate	149		--	--
Carbonate	ND		--	--
OH				--
P-Alkalinity				
pH		5 - 7		--
Spec Cond			--	--
TDS	1010	72,000	--	--
Total Hardness ($CaCO_3$)	830	4,200		
Turbidity				
Total Phosphate	< 0.31	2	--	--
Fluoride	6.1	140	180	--
Barium	31	3	--	--
Iron	< 100	11	--	--
Total Suspended Solids	1960		--	--
Biological Oxygen Demand	< 1		--	--

Soil and Water Resources Appendix B Table 1 (Cont.) – Raw Water Quality and Estimated Chemistry of Wastewater Streams

	Supply Water[1]	Wastewater to Evaporation Pond[2]	STCL[3]	TCLP[4]
Trace Metals				
Arsenic		0.43		
Boron	1.8		--	--
Chromium		0.2		
Copper	< 5	2	25	--
Manganese		0.7		
Molybdenum	73	2	350	--
Nickel		0.4		
Selenium		0.2		
Vanadium	< 5		24	--
Zinc	22	12	250	--

1. Water quality data from AFC Table Water 4, AECOM, 2009

2. Water Quality data from Palen Amendment Table 5.2-1, Palen 2012a

3. STLC = Soluble Threshold Limit Concentration, Regulated by CCR Title 22, Division 4.5, Article 3, Section 66261.24

4. TCLP = Toxicity Characteristics Leaching Procedure; Regulate under 40 CFR Section 261.24

Soil and Water Resources Appendix B Table 2 – Estimated Chemistry of Evaporation Pond Residue

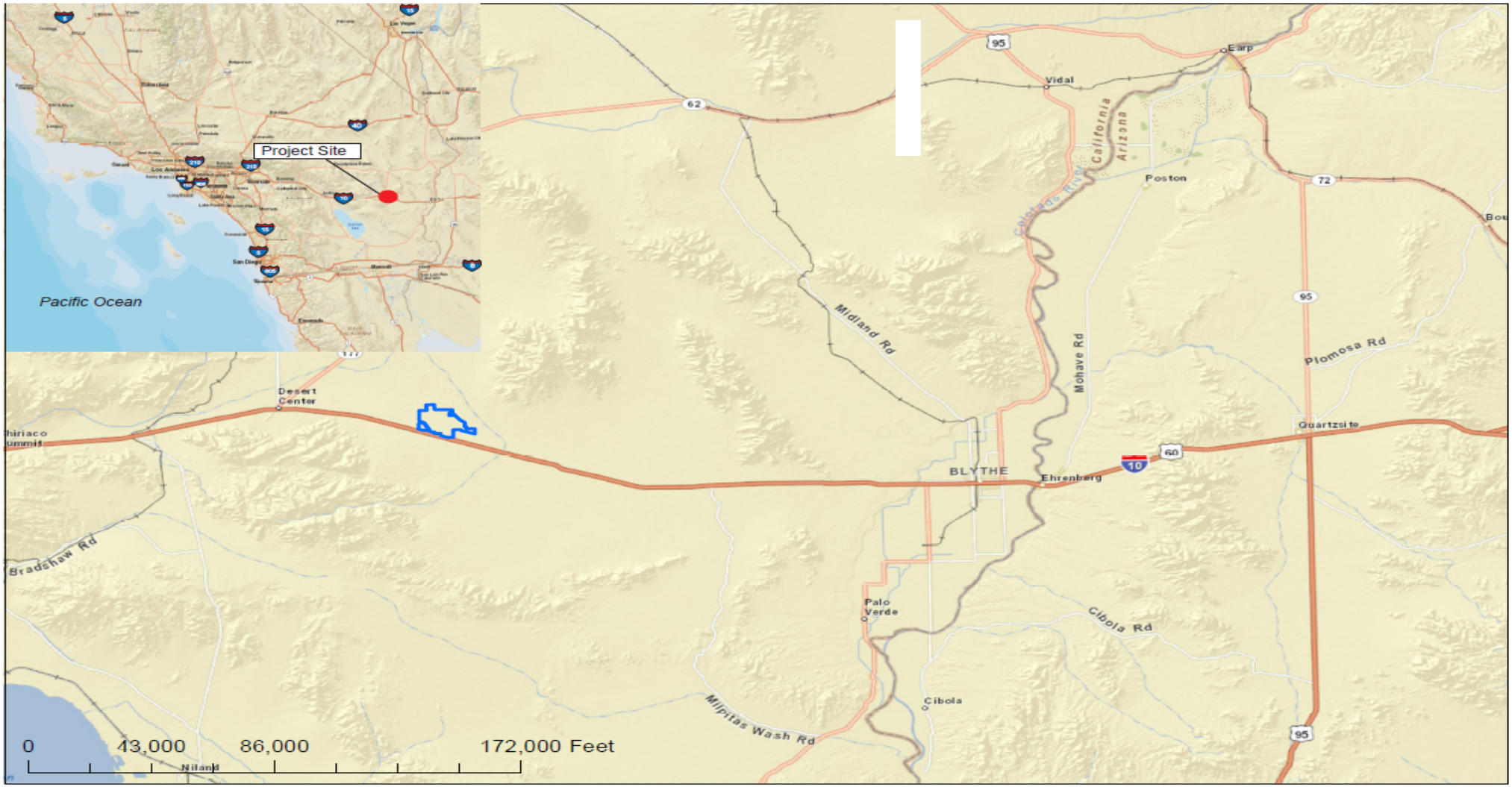
	Concentration in Evaporation Pond Discharge[1]	Total Residue Mass After 1 Year[2]	Concentration in 50% dry solids	Concentration with silt, 50% dry	STLC	TTLC	TCLP
	(mg/L)	(lbs)	(mg/kg)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)
Arsenic	0.43	0.0055	0.013	0.0012			
Barium	3	0.039	0.091	0.0082			
Chromium	0.2	0.0026	0.0061	0.00055			
Copper	2	0.026	0.061	0.0055			
Molybdenum	2	0.026	0.061	0.0055			
Nickel	0.4	0.0052	0.012	0.0011			
Selenium	0.2	0.0026	0.0061	0.00055			
Zinc	12	0.15	0.35	0.032			
Calcium	3000	39	91	8.2			
Magnesium	640	8.2	19	1.7			
Sodium	20500	260	610	55			
Potassium	370	4.8	11	0.99			
Iron	11	0.14	0.33	0.03			
Manganese	0.7	0.0090	0.021	0.0019			
Fluoride	140	1.8	4.2	0.38			
Chloride	25000	320	750	68			
Nitrate, as N	0	0	0	0			
Sulfate	0.15	0.0019	0.0044	0.00040			
Phosphate	2	0.026	0.061	0.0055			
Alkalinity, as CaCO3	4200	54	130	12			
Silica	1200	15	35	3.2			
pH	5-7	--	--	--			
TDS	7200.00	--	--	--			

Notes:
1. Concentration in Evaporation Pond Discharge based on Table 5.2-1 in the Petition for Amendment.
2. Based on daily flow of 4.23 g/d (16.01 l/d, 5,844.5 l/yr) from Project Water Balance.

Soil and Water Resources Appendix B Table 3 – Classification of Wastewater and Evaporation Pond Residue

Waste Stream	Waste Stream Compared To	Regulation	Waste Stream Characteristic	State & Federal Classification	CWC Section 13173 Classification
Wastewater	Soluble Threshold Limit Concentration (STLC)	CCR Title 22, Chapter 11, Division 4.5, Article 3, Section 66261.24 "Characteristics of Toxicity"	<STLC	Non-hazardous	Designated waste
	Toxicity Characteristic Leaching Procedure (TCLP)	Code of Federal Regulations (CFR) Part 261, Section 261.24	<TCLP	Non-hazardous	Designated waste
Evaporation Pond Residue	STLC	CCR, Title 22, Chapter 11, Division 4.5, Article 3, Section 66261.24 "Characteristics of Toxicity"	<STLC	Non-hazardous	Designated waste
	Total Threshold Limit Concentration (TTLC)	CCR, Title 22, Chapter 11, Division 4.5, Article 3, Section 66261.24 "Characteristics of Toxicity"	<TTLC	Non-hazardous	Designated waste
	TCLP	Code of Federal Regulations (CFR) Part 261, Section 261.24	<TCLP	Non-hazardous	Designated waste

Soil and Water Resource Appendix B Figure 1



Legend

Palen Solar Electric Generating System

N

FIGURE NO. 2.1-1

SITE VICINITY MAP

Soil and Water Resources Appendix B Figure 2

SOIL AND WATER RESOURCES – APPENDIX C

REQUIREMENTS FOR WASTE DISCHARGE - Palen Solar Holdings, LLC, Owner/Operator, Palen Solar Electric Generating System, Riverside County

A. Discharge Specifications

1. The treatment or disposal of wastes at this Facility shall not cause pollution or nuisance as defined in Sections 13050 of Division 7 of the California Water Code (CWC).

2. The Discharger will maintain the monitoring wells in good working order at all times. Well maintenance may include periodic well re-development to remove sediments.

3. Thirty (30) days prior to introduction of a new waste stream into the evaporation ponds, the Discharger must receive approval from the Regional Board's Executive Officer.

4. Waste material shall be confined or discharged to the evaporation.

5. Prior to drilling a new well or abandoning a well at the Facility, the Discharger shall notify, in writing, the Regional Board's Executive Officer of the proposed change.

6. Containment of waste shall be limited to the areas designated for such activities. Any revision or modification of the designated waste containment area, or any proposed change in operation at the Facility that changes the nature and constituents of the waste produced must be submitted in writing to the Regional Board's Executive Officer for review and approval before the proposed change in operations or modification of the designated area is implemented.

7. Any substantial increase or change in the annual average volume of material to be discharged under this order at the Facility must be submitted in writing to the Regional Board's Executive Officer for review and approval.

8. If any portions of the evaporation ponds are to be closed, the Discharger shall notify the Regional Board's Executive Officer at least 180 days prior to beginning any partial or final closure activities.

9. Fluids and/or materials discharged to and/or contained in the evaporation ponds shall not overflow the ponds.

10. Prior to the use of new chemicals for the purposes of adjustment or control of microbes, pH, scale, and corrosion of the cooling tower water and wastewater, the Discharger shall notify the Regional Board's Executive Officer in writing.

11. For the liquids in the evaporation ponds, a minimum freeboard of two (2) feet shall be maintained at all times.

12. Final disposal of residual waste from cleanup of the evaporation ponds shall be accomplished to the satisfaction of the Regional Board's Executive Officer upon abandonment or closure of operations.

13. The evaporation ponds shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods having a predicted frequency of once in 100 years.

14. Prior to removal of solid material that has accumulated in the evaporation ponds, an analysis of the material must be conducted and the material must be disposed of in a manner consistent with that analysis and applicable laws and regulations.

15. Conveyance systems throughout the Facility area shall be cleaned out at least every 90 days to prevent the buildup of solids.

16. Pipe maintenance and de-scaling activities that include hydroblasting and/or sandblasting shall be performed within a designated area that minimizes the potential for release to the environment. Waste generated as a result of these activities shall be disposed of in accordance with applicable laws and regulations. Water from the hydroblasting process shall be conveyed to the evaporation ponds.

17. Public contact with wastewater shall be precluded through such means as fences, signs, or other acceptable alternatives.

18. The evaporations ponds shall be managed and maintained to ensure their effectiveness, in particular,

19. Implementation of erosion control measures shall assure that small coves and irregularities are not created.

20. The liner beneath the evaporation ponds shall be appropriately maintained to ensure its proper functioning.

21. Solid material shall be removed from the evaporation ponds in a manner that minimizes the likelihood of damage to the liner.

22. Ninety (90) days prior to the cessation of discharge operations at the Facility, the Discharger shall submit a workplan, subject to approval of the Regional Board's Executive Officer, for assessing the extent, if any, of contamination of natural geological materials and waters of the Chuckwalla Valley Groundwater Basin by the waste. One hundred twenty (120) days following workplan approval, the Discharger shall submit a technical report presenting results of the contamination assessment. A California Registered Civil Engineer or Certified Engineering Geologist must prepare the workplan, contamination assessment, and engineering report.

23. Upon ceasing operation at the Facility, all waste, all natural geologic material contaminated by waste, and all surplus or unprocessed material shall be

removed from the site and disposed of in accordance with applicable laws and regulations.

24. The Discharger shall establish an irrevocable bond for closure in an amount acceptable to the Regional Board's Executive Officer or provide other means to ensure financial security for closure if closure is needed at the discharging site. The closure fund shall be established (or evidence of an existing closure fund shall be provided) within six (6) months of the adoption of this Order.

25. Surface drainage from tributary areas or subsurface sources, shall not contact or percolate through the waste discharged at this site.

26. The Discharger shall implement the attached Monitoring and Reporting Program, Appendix D, and revisions thereto, in order to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from the Facility, or any impairment of beneficial uses associated with (caused by) discharges of waste to the brine pond.

27. The Discharger shall use the constituents listed in the attached Monitoring and Reporting Program, Appendix D, and revisions thereto, as "Monitoring Parameters".

28. The Discharger shall follow the Water Quality Protection Standard (WQPS) for detection monitoring established by the Regional Board. The following are parts of WQPS as established by the Regional Board's Executive Officer:

    a. The Discharger shall test for the monitoring parameters and the Constituents of Concern (COCs) listed in the Monitoring and Reporting R7-2010-0xxx and revisions thereto.

    b. Concentration Limits – The concentration limit for each monitoring parameter and constituents of concern for each monitoring point (as stated in the Detection Monitoring Program), shall be its statically determined background value or method detection limit, whichever is higher as obtained during that reporting period.

29. All current, revised, and/or proposed monitoring points must be approved by the Region Board's Executive Officer.

30. Water used for the process and site maintenance shall be limited to the amount necessary in the process, for dust control, and for Facility cleanup and maintenance.

31. The Discharger shall not cause or permit the release of pollutants, or waste constituents, in a manner which could cause or contribute to a condition of contamination, nuisance, or pollution to occur.

32. The Discharger must develop and implement a Hazardous Materials Business Plan (HMBP), which will include, at a minimum, procedures for:

    a. Hazardous materials handling, use, and storage;

b. Emergency response;

c. Spill control and prevention;

d. Employee training; and

e. Reporting and record keeping.

33. Hazardous materials expected to be used during construction include: unleaded gasoline, diesel fuel, oil, lubricants (i.e., motor oil, transmission fluid, and hydraulic fluid), solvents, adhesives, and paint materials. There are no feasible alternatives to these materials for construction or operation of construction vehicles and equipment, or for painting and caulking buildings and equipment.

34. The construction contractor will be responsible for assuring that the use, storage and handling of these materials will comply with applicable federal, state, and local laws, ordinances, regulations and standards (LORS), including licensing, personnel training, accumulation limits, reporting requirements, and recordkeeping.

35. During Facility operations, chemicals will be stored in chemical storage areas appropriately designed for their individual characteristics. Bulk chemicals will be stored outdoors on impervious surfaces in aboveground storage tanks with secondary containment. Secondary containment areas for bulk storage tanks will not have drains. Any chemical spills in these areas will be removed with portable equipment and reused or disposed of properly. Other chemicals will be stored and used in their delivery containers.

36. A portable storage trailer may be on-site for storage of maintenance lube oils, chemicals, paints, and other construction materials, as needed. All drains and vent piping for volatile chemicals will be trapped and isolated from other drains to eliminate noxious vapors. The storage, containment, handling, and use of these chemicals will be managed in accordance with applicable laws, ordinances, regulations, and standards.

37. Small quantities of hazardous wastes will be generated over the course of construction. These may include paint, spent solvents, and spent welding materials. Some hazardous wastes will be recycled, including used oils from equipment maintenance, and oil-contaminated materials such as spent oil filters, rags, or other cleanup materials. Used oil must be recycled, and oil or heavy metal contaminated materials (e.g., filters) requiring disposal must be disposed of in a Class I waste disposal facility. Scale from pipe and equipment cleaning operations, and solids from the evaporation pond, will be disposed of in a similar manner.

38. All hazardous wastes generated during facility construction and operation must be handled and disposed of in accordance with applicable laws, ordinances, regulations, and standards. Any hazardous wastes generated during construction must be collected in hazardous waste accumulation containers near the point of generation and moved daily to the contractor's 90-day hazardous waste storage

area located on-site. The accumulated waste must subsequently be delivered to an authorized waste management facility. Hazardous wastes must be either recycled or managed and disposed of properly in a licensed Class I waste disposal facility authorized to accept the waste.

39. The Discharger shall monitor the evaporation ponds in conformance with applicable CCR Title 27 requirements for Class II surface impoundment waste management units.

40. The leachate collection and removal system must be used to provide preliminary detection monitoring of leaks through the top liner of the doublelined evaporation ponds. Physical evidence of leachate beneath the upper concrete liner shall be interpreted as a warning that containment of the evaporation pond contents may be compromised.

41. Groundwater monitoring wells must be constructed adjacent to and both up gradient and down gradient of the evaporation ponds to provide background and detection monitoring for any potential release from the evaporation ponds containment. The Point of Compliance to be used for the detection monitoring must be the uppermost groundwater beneath the evaporation pond. The groundwater monitoring wells must be constructed in conformance with Title 27 CCR Section 20415 requirements. The monitoring wells must be designed to meet the background and detection monitoring requirements in conformance with Title 27 CCR Section 20415(b)(1)(B) as applicable, including:

    a. Providing a sufficient number of monitoring points to yield ground water samples from the uppermost aquifer that represent the quality of ground water passing the Point of Compliance and to allow for the detection of a release from the evaporation ponds;

    b. Providing a sufficient number of monitoring points and background monitoring points installed at appropriate locations and depths to yield ground water samples from the uppermost aquifer to provide the best assurance of the earliest possible detection of a release from the evaporation ponds; and

    c. Selecting monitoring point locations and depths that include the zone(s) of highest hydraulic conductivity in the ground water body monitored.

42. The detection monitoring wells shall be constructed to meet the well performance standards set forth in Title 27 CCR Section 20415(b)(4), as applicable, including:

43. All monitoring wells shall be cased and constructed in a manner that maintains the integrity of the monitoring well bore hole and prevents the bore hole from acting as a conduit for contaminant transport.

44. The sampling interval of each monitoring well shall be appropriately screened and fitted with an appropriate filter pack to enable collection of representative ground water samples.

45. For each monitoring well, the annular space (i.e., the space between the bore hole and well casing) above and below the sampling interval shall be appropriately sealed to prevent entry of contaminants from the ground surface, entry of contaminants from the unsaturated zone, cross contamination between portions of the zone of saturation, and contamination of samples.

46. All monitoring wells shall be adequately developed to enable collection of representative ground water samples.

47. The monitoring program must also meet the general requirements set forth in Title 27 CCR Section 20415(e), which require that all monitoring systems be designed and certified by a registered geologist or a registered civil engineer. The applicable general requirements set forth for boring logs, quality assurance/quality control, sampling and analytical methods used, background sampling, data analysis, and other reporting as applicable will be implemented.

48. Baseline samples of the groundwater must be collected from each of the monitoring wells and analyzed prior to discharging wastewater to the evaporation ponds. The groundwater must be initially sampled for each of the proposed monitoring parameters listed in the attached Monitoring and Reporting Program, Appendix D, and any additional Constituents of Concern (COC) identified by the Regional Board.

B. Prohibitions

1. The discharge or deposit of solid waste to the evaporation ponds as a final form of disposal is prohibited, unless authorized by the Regional Board's Executive Officer.

2. The Discharger is prohibited from discharging, treating or composting at this site the following wastes:

   a. Municipal solid waste;

   b. Sludge (including sewage sludge, water treatment sludge, and industrial sludge);

   c. Septage;

   d. Liquid waste, unless specifically allowed by these WDRs or approved by the Regional Board's Executive Officer;

   e. Oily and greasy liquid waste; unless specifically allowed by these WDRs or approved by the Regional Board's Executive Officer;

   f. Hot, burning waste materials or ash.

3. The Discharger shall not cause degradation of any groundwater aquifer or water supply.

4. The discharge of waste to land not owned or controlled by the Discharger is prohibited.

5. Use of wastewater or cooling tower liquids on access roads, well pads, or other developed project locations for dust control is prohibited.

6. The discharge of hazardous or designated wastes to other than a waste management unit authorized to receive such waste is prohibited.

7. Any hazardous waste generated or stored at the facility will be contained and disposed in a manner that complies with federal and state regulations.

8. Wastewater or any fluids in the evaporation ponds shall not enter any canal, drainage, or drains (including subsurface drainage systems) which could provide flow to the Waters of the State.

9. The Discharger shall appropriately dispose of any materials, including fluids and sediments removed from the evaporation ponds.

10. The Discharger shall neither cause nor contribute to the contamination or pollution of ground water via the release of waste constituents in either liquid or gaseous phase.

11. Direct or indirect discharge of any waste to any surface water or surface drainage courses is prohibited.

12. The Discharger shall not cause the concentration of any Constituent of Concern or Monitoring Parameter to exceed its respective background value in any monitored medium at any Monitoring Point assigned for Detection Monitoring pursuant to the attached Monitoring and Reporting, Appendix D, and future revisions thereto.

C. Provisions

1. The Discharger shall comply with the attached Monitoring and Reporting Program, Appendix D, and future revisions thereto, as specified by the Regional Board's Executive Officer.

2. Unless otherwise approved by Regional Board's Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the California Department of Public Health. All analyses shall be conducted in accordance with the latest edition of "Guideline Establishing Test Procedures for Analysis of Pollutants", promulgated by the United States Environmental Protection Agency.

3. The laboratory shall use detection limits less than or equal to Environmental Protection Agency (EPA) Action Level/Maximum Contaminate Levels (MCLs) or California Department of Public Health (CDPH) Notification Level/MCL for all samples analyzed. The lowest concentration, whether EPA or CDPH, of the two agencies must be used for the analysis.

4. Prior to any change in ownership of this operation, the Discharger shall transmit a copy of the Board Order to the succeeding owner/operator, and forward a copy of the transmittal letter to the Regional Board.

5. Prior to any modification in this facility that would result in material change in the quality or quantity of discharge, or any material change in the location of discharge, the Discharger shall report all pertinent information in writing to the Regional Board's Executive Officer and obtain revised waste discharge requirements before any modification is implemented.

6. All permanent containment structures and erosion and drainage control systems shall be certified by a California Registered Civil Engineer or Certified Engineering Geologist as meeting the prescriptive standards and performance goals.

7. The Discharger shall ensure that all site-operating personnel are familiar with the content of these WDRs, and shall maintain a copy of these WDRs at the site.

8. These WDRs do not authorize violation of any federal, state, or local laws or regulations.

9. The Discharger shall allow the Regional Board, or an authorized representative, upon presentation of credential and other documents as may be required by law, to:

    a. Enter upon the premises regulated by these WDRs, or the place where records must be kept under the conditions of these WDRs;

    b. Have access to and copy, at reasonable times, any records that shall be kept under the condition of these WDRs;

    c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under these WDRs; and

    d. Sample or monitor at reasonable times, for the purpose of assuring compliance with these WDRs or as otherwise authorized by the CWC or California Code of Regulations, any substances or parameters at this location.

10. The Discharger shall comply with all of the conditions of these WDRs. Any noncompliance with these WDRs constitutes a violation of the Porter-Cologne Water Quality Act and may be grounds for enforcement action.

11. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with these WDRs. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.

12. These WDRs do not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

13. The Discharger shall comply with the following:

    a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

    b. The Discharger shall retain records of all monitoring information, copies of all reports required by these WDRs, and records of all data used to complete the application for these WDRs, for a period of at least five (5) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Board's Executive Officer at any time.

    c. Records of monitoring information shall include:

        i. The date, exact places, and time of sampling or measurements.

        ii. The individual(s) who performed the sampling or measurements.

        iii. The date(s) analyses were performed.

        iv. The individual(s) responsible for reviewing the analyses.

        v. The results of such analyses.

    d. Monitoring must be conducted according to test procedures described in the attached Monitoring and Reporting Program, Appendix D, unless other test procedures have been specified in these WDRs or approved by the Regional Board's Executive Officer.

14. All monitoring systems shall be readily accessible for sampling and inspection.

15. The Discharger is the responsible party for the WDRs, and the monitoring and reporting program for the Facility. The Discharger shall comply with all conditions of these WDRs. Violations may result in enforcement actions, requiring corrective action or imposing civil monetary liability.

16. The Discharger shall furnish, under penalty of perjury, technical monitoring program reports, and such reports shall be submitted in accordance with the specifications prepared by the Regional Board's Executive Officer. Such specifications are subject to periodic revisions as may be warranted.

17. The Discharger may be required to submit technical reports as directed by the Regional Board's Executive Officer.

18. The procedure for preparing samples for the analyses shall be consistent with the attached Monitoring and Reporting Program, Appendix D, and any future revisions thereto. The Monitoring Reports shall be certified to be true and correct, and signed, under penalty of perjury, by an authorized official of the company. All

technical reports require the signature of a California Registered Professional Engineer or Professional Geologist.

19. All monitoring shall be done as described in Title 27 of the CCRs.

SOIL AND WATER RESOURCES – APPENDIX D

MONITORING AND REPORTING PROGRAM FOR WASTEWATER DISCHARGE - Palen Solar Holdings, LLC, Owner/Operator, Palen Solar Electric Generating System, Riverside County

PART I – GENERAL REQUIREMENTS

A. GENERAL

A Discharger who owns or operates a Class II Surface Impoundment is required to comply with the provisions of Title 27, Division 2, Chapter 3, Subchapter 3, Article 1 of the California Code of Regulations for the purpose of detecting, characterizing, and responding to releases to the groundwater. Section 13267, California Water Code (CWC) gives the Colorado River Basin Regional Water Quality Control Board (Regional Board) authority to require monitoring program reports for discharges that could affect the quality of waters within its region.

1. This Monitoring and Reporting Program (MRP) is Appendix D of the WDRs set forth in Appendices B and C, and are incorporated herein by this reference. The principal purpose of this self-monitoring program is:

   a. To document compliance with Waste Discharge Requirements (WDRs), and prohibitions established by the Regional Board;

   b. To facilitate self-policing by the Discharger in the prevention and abatement of pollution arising from waste discharge;

   c. To conduct water quality analyses.

2. The Regional Board Executive Officer may alter the monitoring parameters, monitoring locations, and/or the monitoring frequency during the course of this monitoring program.

B. DEFINITION OF TERMS

1. Affected Persons – all persons who either own or occupy land outside the boundaries of the parcel upon which a waste management unit (surface impoundment or impoundment) is located that has been or may be affected by the release of waste constituents from the unit.

2. Background Monitoring Point – a device (e.g. well) or location (e.g. a specific point along a lakeshore) that is up gradient or side gradient from the impoundment assigned by this MRP, where water quality samples are taken that are not affected by a release from the impoundment and that are used as a basis of comparison against samples taken from down gradient Monitoring Points.

3. Constituents of Concern (COCs) – those constituents likely to be in the waste, or derived from waste constituents in the event of a release from the impoundment.

4. Matrix Effect – refers to any change in the Method Detection Limit (MDL) or Practical Quantitation Limit (PQL) for a given constituent as a result of the

presence of other constituents - either of natural origin or introduced through a spill or release - that are present in the sample being analyzed.

5. Method Detection Limit (MDL) – the lowest constituent concentration that can support a non-zero analytical result with 99 percent reliability. The MDL is laboratory specific and should reflect the detection capabilities of specific procedures and equipment used by the laboratory.

6. Monitored Media – water - bearing media monitored pursuant to this Monitoring and Reporting Program. The Monitored Media may include: (1) groundwater in the uppermost aquifer, in any other portion of the zone of saturation (as defined in Title 27, Section 20164) in which it would be reasonable to anticipate that waste constituents migrating from the surface impoundment could be detected, and in any perched zones underlying the impoundment, (2) any bodies of surface water that could be measurably affected by a release, (3) soil-pore liquid beneath and/or adjacent to the surface impoundment, and (4) soil-pore gas beneath and/or adjacent to the surface impoundment.

7. Monitoring Parameters – the list of constituents and parameters used for the majority of monitoring activity.

8. Monitoring Point – a device (e.g. well) or location (e.g. a specific point along a lakeshore) that is down gradient from the surface impoundment assigned by this MRP, at which samples are collected for the purpose of detecting a release by comparison with samples collected at Background Monitoring Points.

9. Practical Quantification Limit (PQL) – the lowest constituent concentration at which a numerical concentration can be assigned with a 99 percent certainty that its value is within 10 percent of the actual concentration in the sample. The PQL is laboratory specific and should reflect the detection capabilities of specific procedures and equipment used by the laboratory.

10. Reporting Period – the duration separating the submittal of a given type of monitoring report from the time the next iteration of that report is scheduled for submittal. Unless otherwise stated, the due date for any given report shall be 30 days after the end of its Reporting Period.

11. Sample Locations -

    a. For Monitoring Points – the number of data points obtained from a given Monitoring Point during a given Reporting Period – used for carrying out the statistical or non-statistical analysis of a given analyte during a given Reporting Period.

    b. For Background Monitoring Points – the number of new and existing data points from all applicable Background Monitoring Points in a given Monitored Medium – used to collectively represent the background concentration and variability of a given analyte in carrying out a statistical or non-statistical analysis of that analyte during a given Reporting Period.

12. Uppermost Aquifer – the geologic formation nearest the natural ground surface that is an aquifer, as well as, lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

13. Volatile Organic Constituents (VOCs) – the suite of organic constituents having a high vapor pressure. The term includes at least the 47 organic constituents listed in Appendix I to 40 CFR Part 258.

14. VOC_{water} – the composite monitoring parameter that includes all VOCs that are detectable in less than 10 percent of the applicable background samples. This parameter is analyzed using the non-statistical method described in Part III.A.2 of this MRP, to identify releases of VOCs that are detected too infrequently in background water to allow for statistical analysis.

C. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA methods, and California ELAP rulings. Water and waste analysis shall be performed by a laboratory approved for these analyses by the California Department of Public Health. Specific methods of analysis must be identified. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and approval by the Regional Board Executive Officer prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurement. In addition, the Discharger is responsible for verifying that laboratory analysis of all samples from Monitoring Points and Background Monitoring Points meet the following restrictions:

1. Methods, analysis, and detection limits used must be appropriate for expected concentrations. For detection monitoring of any constituent or parameter found in concentrations that produce more than 90% non-numerical determinations (i.e. "trace" or "ND") in data from Background Monitoring Points for that medium, the analytical methods having the lowest "facility-specific method detection limit (MDL)", defined in Part I.B.5., shall be selected from among those methods that provide valid results in light of any "Matrix Effects" (defined in Part I.B.4.) involved.

2. Analytical results falling between the MDL and the PQL shall be reported as "trace", and shall be accompanied both by the estimated MDL and PQL values for that analytical run, and by an estimate of the constituent's concentration.

3. MDLs and PQLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific equipment used by the lab. If the lab suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values,

the results shall be flagged accordingly, along with an estimate of the detection limit and quantitation limit actually achieved.

4. All Quality Assurance/Quality Control (QA/QC) data shall be reported, along with the sample results to which it applies, including the method, equipment, and analytical detection limits, the recovery rates, an explanation of any recovery rate that is less than method recovery standards, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recovery.

5. Upon receiving written approval from the Regional Board Executive Officer, an alternative statistical or non-statistical procedure can be used for determining the significance of analytical results for a constituent that is a common laboratory contaminant (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Reporting Period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, analytical results involving detection of these analytes in any background or down gradient sample shall be reported and flagged for easy reference by Regional Board staff.

6. In cases where contaminants are detected in QA/QC samples (i.e. field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

7. The MDL shall always be calculated such that it represents a concentration associated with a 99% reliability of a non-zero result.

D. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five (5) years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board. Such records shall show the following for each sample:

1. Identity of sample and of the Monitoring Point or Background Monitoring Point from which it was taken, along with the identity of the individual who obtained the sample;

2. Date and time of sampling;

3. Date and time that analyses were started and completed, and the initials of the personnel performing each analysis;

4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;

5. Calculations of results; and

6. Results of analyses, and the MDL and PQL for each analysis.

E. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Detection Monitoring Reports – For each Monitored Medium, all Monitoring Points and Background Monitoring Points assigned to detection monitoring under Part II.A.7 of this MRP shall be monitored **semiannually** for the Monitoring Parameters (Part II.A.4). A "Detection Monitoring Report" shall be submitted to the Regional Board in accordance with the schedule contained in the Summary of Self-Monitoring and Reporting Requirements, and shall include the following:

    a. A Letter of Transmittal that summarizes the essential points in each report shall accompany each report submittal. The letter of transmittal shall be signed by a principal executive officer at the level of vice-president or above, or by his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter of transmittal shall include:

        i. A discussion of any violations noted since the previous report submittal and a description of the actions taken or planned for correcting those violations. If no violations have occurred since the last submittal, that should be so stated;

        ii. If the Discharger has previously submitted a detailed time schedule or plan for correcting any violations, a progress report on the time schedule and status of the corrective actions being taken; and

        iii. A statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

    b. A Compliance Evaluation Summary shall be included in each Detection Monitoring Report. The compliance evaluation summary shall contain at least:

        i. Velocity and direction of groundwater flow for each monitored groundwater body under and around the surface impoundment based upon the water level elevations taken during the collection of water quality data. A description and graphical presentation (e.g., arrow on a map) shall be submitted;

        ii. Methods used for water level measurement and pre-sampling purging for each monitoring well addressed by the report including:

            1. Method, time, and equipment used for water level measurement;

            2. Type of pump used for purging, placement of the pump in the well, pumping rate, and well recovery rate;

            3. Methods and results of field testing for pH, temperature, electrical conductivity, and turbidity, including;

                a. Equipment calibration methods, and

                b. Method for disposing of purge water

iii. Methods used for sampling each Monitoring Point and Background Monitoring Point, including:

1. A description of the type of pump, or other device used, and its placement for sampling;

2. A detailed description of the sampling procedure: number and description of samples, field blanks, travel blanks, and duplicate samples; types of containers and preservatives used; date and time of sampling; name and qualifications of individual collecting samples, and other relevant observations;

c. A map or aerial photograph showing the locations of Monitoring Points, and Background Monitoring Points;

d. For each Detection Monitoring Report, provide all relevant laboratory information including results of all analyses, and other information needed to demonstrate compliance with Part I.C.;

e. An evaluation of the effectiveness of the run-off/run-on control facilities;

f. A summary of reportable spills/leaks occurring during the reporting period; include estimated volume of liquids/solids discharged outside designated containment area, a description of management practices to address spills/leaks, and actions taken to prevent reoccurrence.

2. Annual Summary Report – The Discharger shall submit to the Regional Board, an "Annual Summary Report" for the period extending from January 1 through December 31. The "Annual Summary Report" is due **March 15** of each year, and shall include the following:

a. A graphical presentation of analytical data for each Monitoring Point and Background Monitoring Point (Title 27, Section 20415(e)(14)). The Discharger shall submit, in graphical format, the laboratory analytical data for all samples taken within at least the previous five (5) calendar years. Each such graph shall plot the concentration of one (1) or more constituents over time for a given Monitoring Point and Background Monitoring Point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot down gradient data. On the basis of any aberrations noted in the plotted data, the Regional Board Executive Officer may direct the Discharger to carry out a preliminary investigation (Title 27, Section 20080(d)(2)), the results of which will determine whether or not a release is indicated;

b. A tabular presentation of all monitoring analytical data obtained during the previous two (2) Monitoring and Reporting Periods, submitted on hard copy within the annual report as well as digitally on electronic media in a file format acceptable to the Regional Board Executive Officer (Title 27, Section 20420(h)). The Regional Board regards the submittal of data in hard copy and

on diskette CD-ROM as "...a form necessary for..." statistical analysis in that this facilitates periodic review by the Regional Board statistical consultant;

c. A comprehensive discussion of the compliance record and any corrective actions taken or planned, which may be needed to bring the Discharger into full compliance with WDRs;

d. A written summary of the groundwater analyses, indicating changes made since the previous annual report; and

e. An evaluation of the effectiveness of the run on/run-off control facilities, pursuant to Title 27, Section 20365.

3. Contingency Reporting

a. The Discharger shall report any spill of evaporation pond liquid by telephone within 48 hours of discovery. The reportable quantity for evaporation pond liquid is 150 gallons.

After reporting a spill, a written report shall be filed with the Regional Board Executive Officer within seven (7) days, containing at a minimum the following:

i. A map showing the location(s) of the discharge/spill;

ii. A description of the nature of the discharge (all pertinent observations and analyses including quantity, duration, etc.); and

iii. Corrective measures underway or proposed.

b. Should the initial statistical comparison (Part III.A.1.) or non-statistical comparison (Part III.A.2.) indicate, for any Constituent of Concern or Monitoring Parameter, that a release is tentatively identified, the Discharger shall immediately notify the Regional Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved, shall provide written notification by certified mail within seven (7) days of such determination (Title 27, Section 20420(j)(1)), and shall conduct a discrete retest in accordance with Part III.A.3. If the retest confirms the existence of a release, the Discharger shall carry out the requirements of Part I.E.3.d. In any case, the Discharger shall inform the Regional Board of the outcome of the retest as soon as the results are available, following up with written results submitted by certified mail within seven (7) days of completing the retest.

c. If either the Discharger or the Regional Board determines that there is significant physical evidence of a release (Title 27, Section 20385(a)(3)), the Discharger shall immediately notify the Regional Board of this fact by certified mail (or acknowledge the Regional Board's determination) and shall carry out the requirements of Part I.E.3.d. for all potentially-affected monitored media.

d. If the Discharger concludes that a release has been discovered:

i. If this conclusion is not based upon “direct monitoring” of the Constituents of Concern, pursuant to Part II.A.5., then the Discharger shall, within thirty days, sample for all Constituents of Concern at all Monitoring Points and submit them for laboratory analysis. Within seven (7) days of receiving the laboratory analytical results, the Discharger shall notify the Regional Board, by certified mail, of the concentration of all Constituents of Concern at each Monitoring Point. Because this scan is not to be tested against background, only a single datum is required for each Constituent of Concern at each Monitoring Point [Title 27 Section 20420(k)(1)];

ii. The Discharger shall, within 90 days of discovering the release (Title 27, Section 20420(k)(5)), submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring Program meeting the requirements of Title 27, Section 20425; and

iii. The Discharger shall, within 180 days of discovering the release (Title 27, Section 20420(k)(6), submit a preliminary engineering feasibility study meeting the requirements of Title 27, Section 20430.

e. Any time the Discharger concludes - or the Regional Board Executive Officer directs the Discharger to conclude - that a liquid phase release from the surface impoundment has proceeded beyond the facility boundary, the Discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).

i. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release; and

ii. Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding a material change in the nature or extent of the release has occurred.

4. Surface Impoundment - Leakage Detection System (LDS), and Solids Monitoring

a. Sampling and reporting shall be conducted semi-annually.

b. Provide volume of solids removed from the holding pond each month for that reporting period, and transported to a waste management facility for disposal. Include name and location of waste management facility.

c. Conduct quarterly inspections of Leakage Detection System (LDS), and holding pond.

PART II – MONITORING REQUIREMENTS FOR GROUNDWATER

A. GROUNDWATER SAMPLING AND ANALYSIS FOR DETECTION MONITORING

1. Groundwater Surface Elevation and Field Parameters – Groundwater sampling and analysis shall be conducted semiannually pursuant to California ELAP rulings, and include an accurate determination of the groundwater surface elevation and field parameters (temperature, electrical conductivity, turbidity) for each Monitoring Point and Background Monitoring Point (Title 27, Section 20415(e)(13)). Groundwater elevation obtained prior to purging the well and sample collection, shall be used to fulfill the semi-annual groundwater flow rate/direction analyses required under Part I.E.1.b.i. Groundwater wells shall be gauged using an electronic sounder capable of measuring depth to groundwater within 100^{th} of an inch. Following gauging, wells shall be purged according to EPA groundwater sampling procedures until:

   a. pH, temperature, and conductivity are stabilized within 10 percent, and

   b. turbidity has been reduced to 10 NTUs or the lowest practical levels achievable.

   The above identified parameters shall be recorded in the field, and submitted in the monitoring report. Sampling equipment shall be decontaminated between wells. Purge water may be discharged to the brine pond; discharge to the ground surface is prohibited.

2. Groundwater Sample Collection - Groundwater samples shall be collected from all monitoring points and background monitoring points after wells recharge to within at least 80 percent of their original static water level. Groundwater samples shall be collected with a paristaltic pump that is decontaminated between sampling events. Samples shall be labeled, logged on chain-of-custody forms, and placed in cold storage pending delivery to a State certified analytical laboratory.

3. Five-Day Sample Procurement Limitation – To satisfy data analysis requirements for a given reporting period, samples collected from all Monitoring Points and Background Monitoring Points shall be taken within a span not exceeding five (5) days, and shall be taken in a manner that insures sample independence to the greatest extent feasible (Title 27, Section 20415(e)(12)(B)).

4. Groundwater Monitoring Parameters for Detection Monitoring – Groundwater samples collected from monitoring points and background monitoring points shall be analyzed for the following:

Parameter	Unit	Sample Type
Chloride	mg/L	Grab
Sulfate	mg/L	Grab
Total Dissolved Solids (TDS)	mg/L	Grab

Parameter	Unit	Sample Type
pH	#	Grab
Specific Conductance	μohms/cm	Grab
Heavy Metals (Sb, As, Ba, Cd, Ca, Cr, Co, Cu, Pb, Hg, Ni, Se, Zn)	mg/L	Grab
Oil & Grease	mg/L	Grab

All Monitoring Points and Background Monitoring Points assigned to Detection Monitoring shall be sampled semi-annually in **June** and **December** of each year in accordance with Part I of this MRP. Monitoring results shall be reported in the semi-annual Detection Monitoring Report.

5. Data Analysis – Statistical or non-statistical analysis shall be carried out as soon as the data is available, in accordance with Part III of this monitoring program.

   Monitoring Points and Background Monitoring Points – At a minimum of 90 days prior to the operation of the facility, the Discharger shall submit a proposed groundwater monitoring program, including background and detection monitoring locations, to the Executive Officer for review and approval.

6. Initial Background Determination: For the purpose of establishing an initial pool of background data for each Constituent of Concern at each Background Monitoring Point [Title 27, Section 20415(e)(6)]:

   a. Whenever a new Constituent of Concern is added to the Water Quality Protection Standard, including any added by the adoption of this Board Order, the Discharger shall collect at least one (1) sample **quarterly** for at least one (1) year from each Background Monitoring Point in each monitored medium and analyze for the newly-added constituent(s); and

   b. Whenever a new Background Monitoring Point is added, including any added by this Board Order, the Discharger shall sample the new monitoring point at least **quarterly** for at least one (1) year, analyzing for all Constituents of Concern and Monitoring Parameters.

7. Semiannual Determination of Groundwater Flow Rate/Direction (Title 27, Section 20415(e)(15): The Discharger shall measure the water level in each well and determine groundwater flow rate and direction in each groundwater body described in Part II.A.1. at least semiannually. This information shall be included in the semi-annual Detection Monitoring Reports required under Part I.E.1.

PART III – STATISTICAL AND NON-STATISTICAL ANALYSES

A. STATISTICAL AND NON-STATISTICAL ANALYSIS

The Discharger shall use the most appropriate of the following methods to compare the down gradient concentration of each monitored constituent or parameter with its respective background concentration to determine if there has been a release from the surface impoundment. For any given data set, proceed sequentially down the list of statistical analysis methods listed in Part III.A.1., followed by the non-statistical method in Part III.A.2., using the first method for which the data qualifies. If that analysis tentatively indicates the detection of a release, implement the retest procedure under Part III.A.3.

1. Statistical Methods. The Discharger shall use one (1) of the following statistical methods to analyze Constituents of Concern or Monitoring Parameters that exhibit concentrations exceeding their respective MDL in at least ten percent of the background samples taken during that Reporting Period. Each of these statistical methods is more fully described in the Statistical Methods discussion below. Except for pH, which uses a two-tailed approach, the statistical analysis for all constituents and parameters shall be a one-tailed (testing only for statistically significant increase relative to background) approach:

   a. One-Way Parametric Analysis of Variance (ANOVA) followed by multiple comparisons (Title 27, Section 20415(e)(8)) – This method requires at least four (4) independent samples from each Monitoring Point and Background Monitoring Point during each sampling episode. It shall be used when the background data for the parameter or constituent obtained during a given sampling period, has not more than 15% of the data below PQL. Prior to analysis, replace all 'trace' determinations with a value halfway between the PQL and the MDL values reported for that sample run, and replace all "non-detect" determinations with a value equal to half the MDL value reported for that sample run. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each down gradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated from that parameter or constituent; or

   b. One-Way Non-Parametric ANOVA (Kruskal-Wallis Test), followed by multiple comparisons – This method requires at least nine (9) independent samples from each Monitoring Point and Background Monitoring Point; therefore, the Discharger shall anticipate the need for taking more than four (4) samples per Monitoring Point, based upon past monitoring results. This method shall be used when the pooled background data for the parameter or constituent, obtained within a given sampling period, has not more than 50% of the data below the PQL. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each down gradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no

release) to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated for that parameter or constituent; or

c. Method of Proportions – This method shall be used if the "combined data set" – the data from a given Monitoring Point in combination with the data from the Background Monitoring Points – has between 50% and 90% of the data below the MDL for the constituent or parameter in question. This method; (1) requires at least nine (9) down gradient data points per Monitoring Point per Reporting Period, (2) requires at least thirty data points in the combined data set, and (3) requires that $n * P > 5$ (where n is the number of data points in the combined data set and P is the proportion of the combined set that exceeds the MDL); therefore, the Discharger shall anticipate the number of samples required, based upon past monitoring results. The test shall be carried out at the 99% confidence level. If the analysis results in rejection of the Null Hypothesis (i.e., that there is no release), the Discharger shall conclude that a release is tentatively indicated for that constituent or parameter; or

d. Other Statistical Methods. – These include methods pursuant to Title 27, Section 20415(e)(8)(c-e).

2. Non-Statistical Method. The Discharger shall use the following non-statistical methods for all constituents that are not amenable to statistical analysis by virtue of having been detected in less than 10% of applicable background samples. A separate variant of this test is used for the VOC_{water} Composite Monitoring Parameters. Regardless of the test variant used, the method involves a two-step process: (1) from all constituents to which the test variant applies, compile a list of those constituents which equal or exceed their respective MDL in the down gradient sample from a given Monitoring Point, then (2) evaluate whether the listed constituents meet either of the test variant's two possible triggering conditions. For each Monitoring Point, the list described above shall be compiled based on either the data from a single sample taken during the Monitoring Period for that Monitoring Point, or (where several independent samples have been analyzed for that constituent at a given Monitoring Point) from the sample that contains the largest number of detected constituents. Background shall be represented by the data from all samples taken from the appropriate Background Monitoring Points during that Reporting Period (at least one (1) sample from each Background Monitoring Point). The method shall be implemented as follows:

a. VOC_{water} Composite Monitoring Parameter – For any given Monitoring Point, the VOC_{water} Monitoring Parameter is a composite parameter addressing all detectable VOCs including at least all 47 VOCs listed in Appendix I to 40 CFR 258 and all unidentified peaks. The Discharger shall compile a list of each VOC which (1) exceeds its MDL in the Monitoring Point sample (an unidentified peak is compared to its presumed (MDL), and also (2) exceeds its MDL in less than ten percent of the samples taken during that Reporting Period from that medium's Background Monitoring Points. The Discharger shall conclude that a release is tentatively indicated for the VOC_{water} composite Monitoring Parameter if the list either (1) contains two or more constituents, or (2) contains one constituent that exceeds its PQL;

b. Constituents of Concern: As part of the COC monitoring required under Part 2.A.5 of this MRP, for each Monitoring Point, the Discharger shall compile a list of COCs that exceed their respective MDL at the Monitoring Point, yet do so in less than ten percent of the background samples taken during that Reporting Period. The Discharger shall conclude that a release is tentatively indicated if the list either (1) contains two or more constituents, or (2) contains one constituent that exceeds its PQL.

3. Discrete Retest – In the event that the Discharger concludes that a release has been tentatively indicated (under Parts III.A.1. or III.A.2.), the Discharger shall, within 30 days of that conclusion, collect two (2) new suites of samples for the indicated Constituent(s) of Concern or Monitoring Parameter(s) at each indicated Monitoring Point, collecting at least as many samples per suite as were used for the initial test. Re-sampling of Background Monitoring Points is optional. As soon as the retest data is available, the Discharger shall use the same statistical method or non-statistical comparison separately on each suite of retest data. For any indicated Monitoring Parameter or Constituent of Concern at an affected Monitoring Point, if the test results of either (or both) of the retest data suites confirms the original indication, the Discharger shall conclude that a release has been discovered. All retests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the Constituent of Concern or Monitoring Parameter that triggered the indication there, as follows:

   a. If an ANOVA method was used in the initial test, the retest shall involve only a repeat of the multiple comparison procedure, carried out separately on each of the two (2) new suites of samples taken from the indicating Monitoring Point;

   b. If the Method of Proportions statistical test was used, the retest shall consist of a full repeat of the statistical test for the indicated constituent or parameter, carried out separately on each of the two (2) new sample suites from the indicating Monitoring Point;

   c. If the non-statistical comparison was used:

      i. Because the VOC Composite Monitoring parameters (VOC_{water}) each address, as a single parameter, an entire family of constituents which are likely to be present in any surface impoundment release, the scope of the laboratory analysis for each retest sample shall include all VOCs detectable in that retest sample. Therefore, a confirming retest for either parameter shall have validated the original indication even if the suite of constituents in the confirming retest sample(s) differs from that in the sample that initiated the retest;

      ii. Because all Constituents of Concern that are jointly addressed in the non-statistical testing under Part III.A.2. remain as individual Constituents of Concern, the scope of the laboratory analysis for the non-statistical retest samples shall be narrowed to involve only those constituents detected in the sample which initiated the retest.

SUMMARY OF SELF-MONITORING AND REPORTING REQUIREMENTS

A. GROUNDWATER MONITORING

1. Groundwater monitoring wells shall be sampled/analyzed semi-annually for the following parameters/constituents:

Parameters & Constituent	Unit	Type of Sample	Reporting Frequency
a. Chloride	mg/L	grab	semiannual
b. Sulfate	mg/L	grab	semiannual
Total Dissolved Solids (TDS)	mg/L	grab	semiannual
c. PH	#	field measurement	semiannual
d. Specific Conductance	μohms/cm	field measurement	semiannual
e. Heavy Metals (Sb,As, Ba, Cd, Ca, Cr, Co, Cu, Pb, Hg, Ni, Se, Zn)	mg/L	grab	semiannual
f. Oil & Grease	mg/L	grab	semiannual

2. The collection, preservation, and holding times of all samples shall be in accordance with the U.S. Environmental Protection Agency approved procedures. All analyses shall be conducted by a laboratory certified by the California Department of Public Health to perform the required analyses.

B. SURFACE IMPOUNDMENT: Leakage Detection System (LDS), and Solids Monitoring

	Unit	Observation or Sampling Frequency	Reporting Frequency
1. Estimated volume of solid/liquid in holding pond	ft^3	Monthly	semiannual
2. Measurement of freeboard	ft	Monthly	semiannual
3. Volume of solids removed and shipped to off-site waste management facility	tons	Monthly	semiannual

C. MONITORING REPORTS AND OBSERVATION SCHEDULE

"Reporting Period" means the duration separating the submittal of a given type of monitoring report from the time the next iteration of that report is scheduled for submittal. An annual report, which is a summary of all the monitoring during the previous year, shall also be submitted to the Regional Board. The submittal dates for Detection Monitoring Reports and the Annual Summary Report are as follows:

1. Detection Monitoring Reports

a. 1st Semiannual Report (January 1 through June 30) – report due by **August 1**

b. 2nd Semiannual Report (July 1 through December 31) – report due by **March 1**

2. Annual Summary Report

   January 1 through December 31 – report due **March 15** of the following year.

3. The Detection Monitoring Reports and the Annual Summary Report shall include the following:

   a. The Discharger shall arrange the data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with WDRs.

   b. Records of monitoring information shall include:

      i. The date, exact place, and time of sampling or measurement;

      ii. The individual performing the sampling or measurement;

      iii. The date the analysis was performed;

      iv. The initials of the individual performing the analysis;

      v. The analytical technique or method used; and

      vi. The result of the analysis.

   c. Each report shall contain the following statement:

      "I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations."

   d. A duly authorized representative of the Discharger may sign the documents if:

      i. Authorization is made in writing by the person described in Part I.E.1.a;

      ii. Authorization specifies an individual or person having responsibility for the overall operation of the regulated disposal system; and

      iii. Written authorization is submitted to the Regional Board Executive Officer.

      iv. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report. All technical reports require the signature of a California Registered Professional Engineer or Professional Geologist.

COMPLIANCE

KEY EVENTS LIST

PROJECT: _____

DOCKET #: _____

COMPLIANCE PROJECT MANAGER: _____

EVENT DESCRIPTION	DATE
Certification Date	
Obtain Site Control	
On-line Date	
POWER PLANT SITE ACTIVITIES	_____
Start Site Assessment/Pre-construction	
Start Site Mobilization/Construction	
Begin Pouring Major Foundation Concrete	
Begin Installation of Major Equipment	
Completion of Installation of Major Equipment	
First Combustion of Gas Turbine	
Obtain Building Occupation Permit	
Start Commercial Operation	
Complete All Construction	
TRANSMISSION LINE ACTIVITIES	_____
Start T/L Construction	
Synchronization with Grid and Interconnection	
Complete T/L Construction	
FUEL SUPPLY LINE ACTIVITIES	_____
Start Gas Pipeline Construction and Interconnection	
Complete Gas Pipeline Construction	
WATER SUPPLY LINE ACTIVITIES	_____
Start Water Supply Line Construction	
Complete Water Supply Line Construction	

ATTACHMENT 1
COMPLAINT REPORT / RESOLUTION FORM

Complaint Log Number:_____ Docket Number:_____

Project Name:_____

COMPLAINANT INFORMATION

Name:_____ Phone Number:_____

Address:_____

COMPLAINT

DATE COMPLAINT RECEIVED:_____ TIME COMPLAINT RECEIVED:_____

COMPLAINT RECEIVED BY: ☐ TELEPHONE ☐ IN WRITING (COPY ATTACHED)

DATE OF FIRST OCCURRENCE:_____

DESCRIPTION OF COMPLAINT (INCLUDING DATES, FREQUENCY, AND DURATION):_____

FINDINGS OF INVESTIGATION BY PLANT PERSONNEL:_____

DOES COMPLAINT RELATE TO VIOLATION OF A CEC REQUIREMENT? ☐ YES ☐ NO

DATE COMPLAINANT CONTACTED TO DISCUSS FINDINGS:_____

DESCRIPTION OF CORRECTIVE MEASURES TAKEN OR OTHER COMPLAINT RESOLUTION:_____

DOES COMPLAINANT AGREE WITH PROPOSED RESOLUTION? ☐ YES ☐ NO

IF NOT, EXPLAIN:_____

CORRECTIVE ACTION

IF CORRECTIVE ACTION NECESSARY, DATE COMPLETED:_____

DATE FIRST LETTER SENT TO COMPLAINANT (COPY ATTACHED):_____

DATE FINAL LETTER SENT TO COMPLAINANT (COPY ATTACHED):_____

OTHER RELEVANT INFORMATION:_____

"This information is certified to be correct."

PLANT MANAGER SIGNATURE:_____ DATE:_____

(ATTACH ADDITIONAL PAGES AND ALL SUPPORTING DOCUMENTATION, AS REQUIRED)