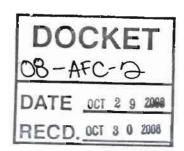


EDAW Inc

1420 Kettner Boulevard, Suite 500, San Diego, California 92101 T 619.233.1454 F 619.233.0952 www.edaw.com

October 29, 2008

Ms. Annette Tenneboe California Department of Fish and Game San Joaquin Valley and Southern Sierra Region 1234 East Shaw Avenue Fresno, California 93710





Subject: Response to CDFG Letter Dated August 8, 2008 on the Beacon Solar Energy Project Streambed Alteration Notification No. 2008-0146-R4

Dear Ms. Tenneboe:

This transmittal has been prepared in response to the letter from the California Department of Fish and Game (CDFG) regarding the completeness of the application package for the Beacon Solar Energy Project (BSEP), Streambed Alteration Notification No. 2008-0146-R4, transmitted to Mr. Kenneth Stein of Beacon Solar Energy, LLC on August 8, 2008.

This package includes the additional information requested in that letter in three attachments as follows:

- 1. Additional prints of Figures 2 and 4 of Attachment 1 depicting the site design and layout. The figures are provided at an appropriate scale for legibility (24x36 and 11x17, respectively) and are also included in the enclosed CD.
- 2. A modified project description that includes project information as requested in a consolidated format, to the extent feasible, with specific references to attachments as appropriate.
- 3. A response to the comment on the timing of the Streambed Alteration Agreement in relation to necessary project approvals.

An Application for Certification for the Beacon Solar Energy Project was submitted to the California Energy Commission (CEC) on March 14, 2008. Additional CEC data requests were responded to on July 16, 2008 and October 13, 2008. It is expected that the CEC will complete the Final Staff Assessment for the Project in spring 2009, with a license decision issued shortly thereafter. Under the Warren-Alquist Act, the CEC process is a California Environmental Quality Act-equivalent process for all state permits issued for the Project, including the SAA. Please call me at (619) 233-1454 if you have any questions or comments.

CEC Docket No. 08-AFC-02

Sincerely,

Jennifer Guigliano

**EDAW** 

cc: Julie Means, CDFG

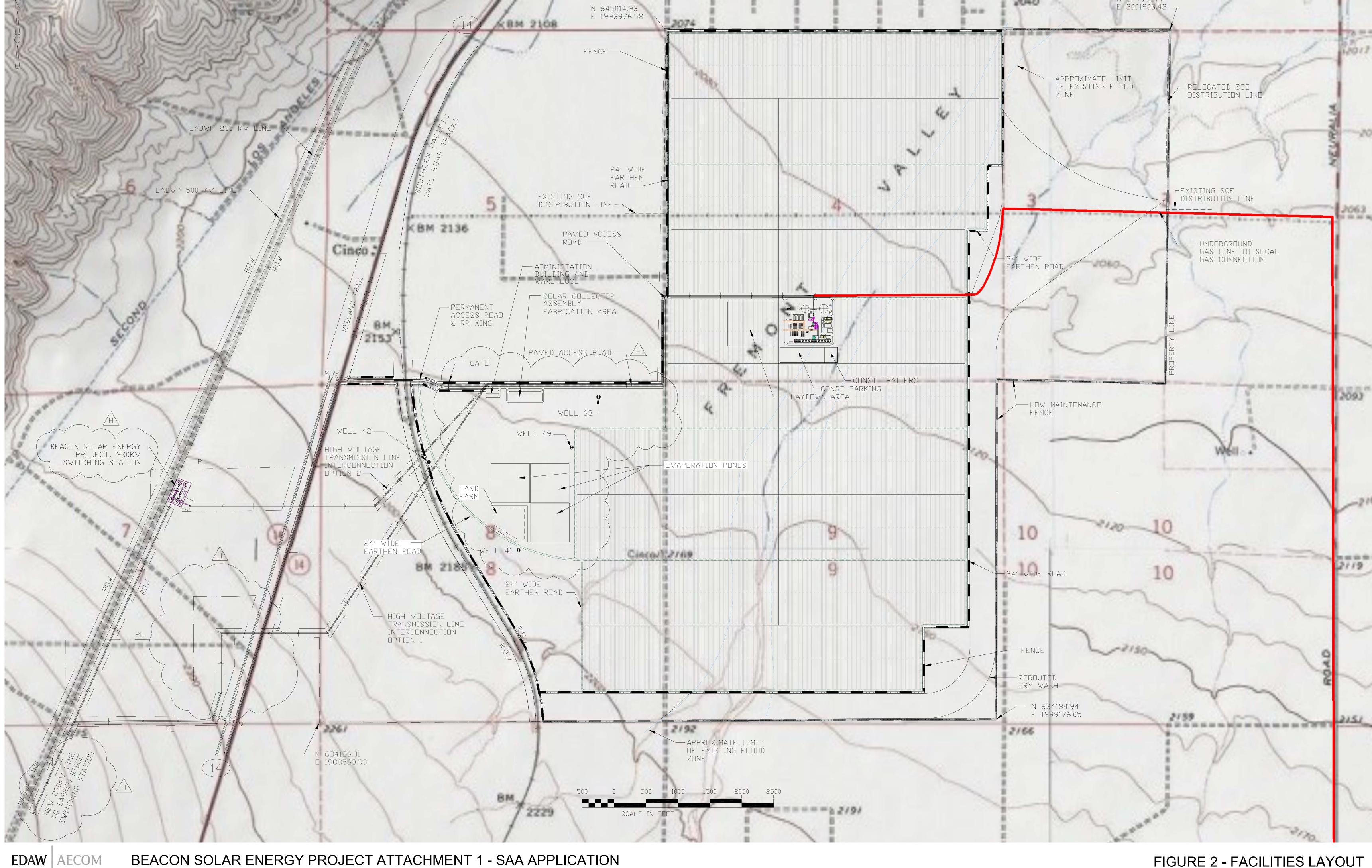
Kenneth Stein, Beacon Solar, LLC Michael Argentine, Beacon Solar, LLC

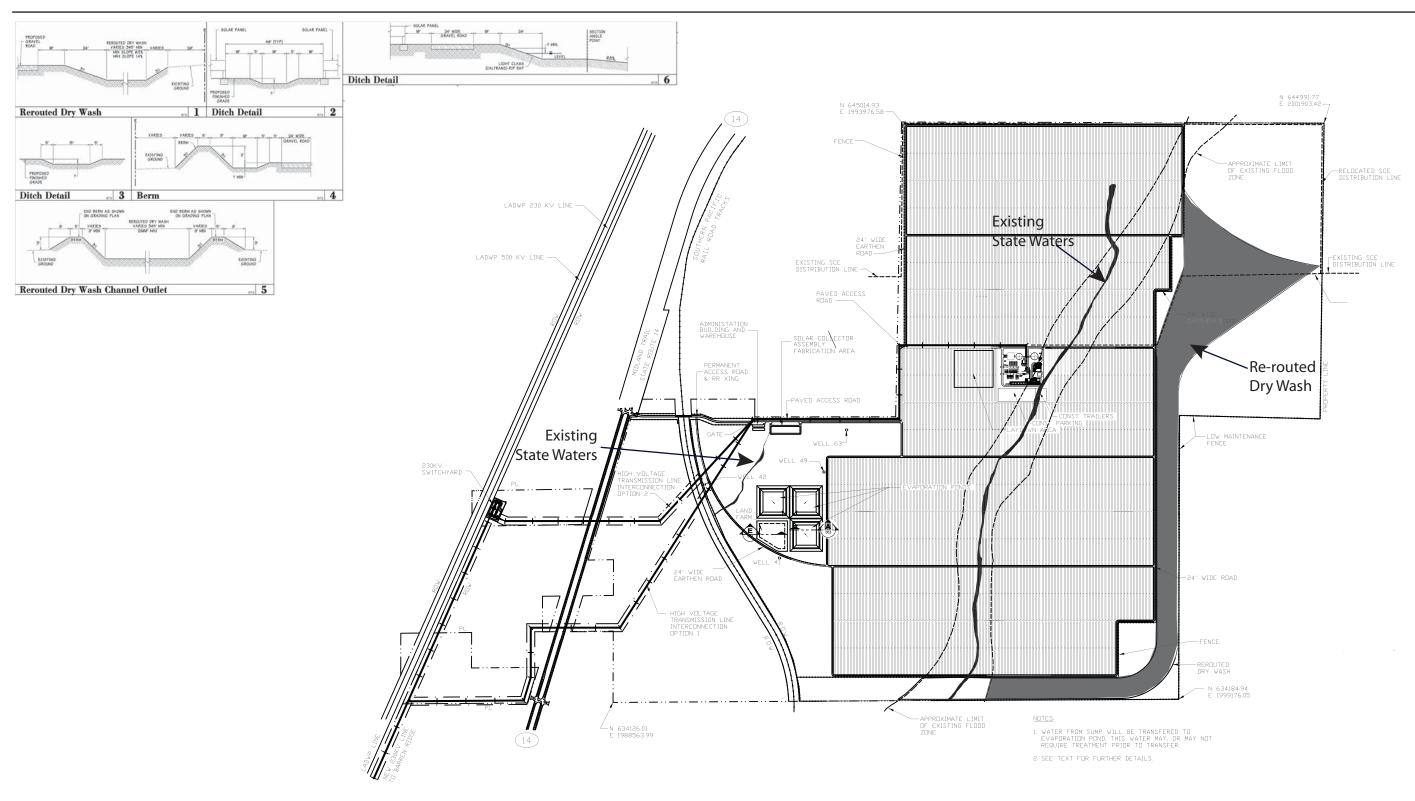
Shaelyn Stratton, CEC Judy Hohman, USFWS

### Attachment 1 – Figures 2 and 4

### **Attachment 3 – Application Processing**

Beacon recognizes that the Department cannot deem its application complete until the appropriate CEQA review has been undertaken. As you know, the BSEP will be licensed by the California Energy Commission (CEC), and the environmental review that will be undertaken by the CEC has been deemed to be a CEQA-equivalent process under the Warren-Alquist Act. We appreciate the Department's willingness to work with Beacon during the CEC process, including informal consultation, to ensure that the CEC's Final Staff Assessment (FSA) and Final Commission Decision (FCD) fully describe the potential Project-related impacts to stream and riparian resources and listed species, and include appropriate measures to avoid, minimize and mitigate those impacts, thereby satisfying the Department's Streambed Alteration Agreement (SAA) requirements. By providing input to the CEC throughout the licensing process, the Department can assure that its requirements are reflected in the Final Decision for the BSEP, as well as be in a position to timely issue the SAA, relying on the CEC's CEQA-equivalent process.





Source: Worley Parsons Resources & Energy 2007



1,800 900 0 1,800 Feet

Scale: 1 inch = 1,800 feet

Figure 4
Facilities Layout and
Re-routed Wash

# Attachment 2 – Field 10, Project Description for Streambed Alteration Notification No. 2008-0146-R4

The following is an updated project description as required in Field 10 of the Streambed Alteration Agreement (SAA) Application Package. This update includes a summary of construction related activity details and information.

### **Project Description**

Beacon Solar, LLC, proposes to develop approximately 2,012 acres for a 250-megawatt solar energy facility called the Beacon Solar Energy Project (the Project). A California Energy Commission (CEC) Application for Certification (AFC) for the Project was submitted on March 14, 2008. The construction phase of this Project is estimated to take approximately 25 months, while the operational lifetime of the Project is anticipated to be up to approximately 30 years. Initial site preparation (i.e., grading), including work within waters of the state, is anticipated to take approximately 90 days (three months) at the onset of the project. Once initial work is complete, construction of the facility is anticipated to last an additional 22 months, for a total construction phase of approximately 25 months. The solar array field and related power plant facilities will be located east of California State Route 14 (SR-14), while a relatively small area west of the highway is proposed to be used for interconnection with an existing Los Angeles Department of Water and Power (LADWP) high voltage transmission line at LADWP's existing Barren Ridge Switching Station.

The Project will utilize parabolic trough solar thermal technology based on the technology in use at existing Solar Electric Generating System facilities located at Harper Lake, Kramer Junction, and Daggett in the Mojave Desert. This technology involves a modular solar array field comprising many parallel rows of solar collectors normally aligned in a north-south axis. Each solar collector has a linear parabolic-shaped reflector that focuses the sun's direct beam radiation on a receiver located at the focal point of the parabola. This linear receiver contains a heat transfer fluid (HTF), a synthetic oil that heats up to approximately 740 degrees Fahrenheit as it circulates through the receiver and returns to a series of heat exchangers where the fluid is used to generate steam that drives a steam turbine to generate electrical power. A wet cooling tower is proposed to provide cooling for the power generating equipment.

The Project includes the 2,012-acre Plant Site (solar array, power generating equipment, support facilities, evaporation ponds, a cooling tower, and access roads) and the Project's linear facilities (transmission line, switchyard, and natural gas supply pipeline). As indicated previously, it has been determined that only the Plant Site will impact waters of the state (i.e., dry desert wash); therefore, only the Plant Site will be discussed further in this application.

#### **Plant Site**

The currently undeveloped Plant Site contains sheet drainage/runoff into drainages (typically dry) associated with an existing dry desert wash known as Pine Tree Creek Wash. Development of the Plant Site to contain the solar array, power block area, cooling tower, and onsite support facilities will require rerouting Pine Tree Creek Wash around the Plant Site. Pine Tree Creek Wash traverses the site for 10,900 linear feet (approximately 14.96 acres of jurisdictional state waters) and will be rerouted by creating an open creek bed adjacent to and outside the security fence (which includes desert tortoise exclusion fencing), but within the Plant Site boundary.

A portion of a smaller, unnamed dry desert wash that traverses the southwestern portion of the Plant Site for 2,150 linear feet (approximately 1.04 acres of jurisdictional state waters) will also be rerouted and a channel created to transport water north and then west to east across the site, joining with Pine Tree Creek Wash at the eastern boundary of the site. During infrequent large precipitation events, runoff from the site may reach Koehn Lake, which is approximately six miles to the northeast.

The existing topographic conditions of the Plant Site show an average slope of 1 to 3 percent toward the northeast. The Plant Site will be graded generally following the existing contours of the site to maintain a maximum slope of 1.5 percent. Runoff from the Plant Site will drain by sheet flow to shallow diversion swales running in the east-west direction to the rerouted Pine Tree Creek Wash that will extend adjacent to the eastern edge of the solar facilities.

The proposed power block area is centrally located within the solar field at the Plant Site and includes the cooling tower. The power block area will drain to the south and east away from equipment foundations, by means of sheet flow and swales, as needed. The runoff will then flow through ditches to relocated Pine Tree Creek Wash to the south. Local area containments will be provided around locations, such as oil-filled transformers and chemical storage areas. The water from these areas and from other plant drains will be sent to an onsite oil-water separator and then added to the plant cooling water.

Evaporation ponds are planned in a highly disturbed area in the western portion of the Plant Site. The evaporation ponds will use the sun's energy to remove water from the cooling system waste stream. Although the ponds will be designed to contain the total amount of concentrated, dewatered cooling system wastes from the Project's 30-year operational life, the dewatered pond residuals will eventually be transported off site for disposal as a nonhazardous waste in an appropriately permitted facility.

Existing site elevations range from approximately 2,050 to 2,260 feet above mean sea level. Mass grading of the Plant Site will occur at the beginning of the Project construction period,

lasting for approximately three months. The grading will result in six to seven terraces, each sloping, on average, 1.5 percent downward from the southwest to the northeast. No import or export of soil from the site will be required. Earthwork associated with the proposed Project will include excavation for foundations and underground systems. The Project's power block and solar field areas will be graded to allow for a balanced distribution of material, so there is no requirement to truck large quantities of earth materials to or from the site. The cut and fill grading necessary to create suitable conditions for Project construction will result in an elevation of approximately 2,050 to 2,250 feet above mean sea level.

Adjustments will be made to provide engineered fill as required for stabilization under equipment and structure foundations per the Project geotechnical report. Only soil materials approved by a geotechnical engineer for structural fill will be used. Additionally, specialized granular materials may need to be imported to the proposed site for road base and possible use below foundations.

The following is a complete, detailed, bulleted summary of construction activities related to the realignment of Pine Tree Creek and the unnamed tributary.

- Construction and Equipment Access: The existing Pine Tree Creek is located within the Plant Site and must be relocated to accommodate construction of the Plant Site facilities. Heavy equipment such as backhoes and bulldozers will be employed during Plant Site preparation for construction of the proposed Project. During earth movement activities it is anticipated that between 100 and 250 construction personnel may be on site at any given time. This would include equipment and machinery operators, construction management personnel, surveyors, and qualified construction monitors. Temporary construction laydown and parking areas will be provided within the Plant Site (see SAA Application Figure 2) to facilitate construction of the Plant Site and the rerouted wash. Due to the size of the Plant Site, the solar field laydown area will be relocated periodically as the solar field is built out. The construction sequence for power plant construction includes the following general steps:
  - Construction access will be located where the main access road is located. As
    discussed above the laydown areas will be located within the solar field (see SAA
    Application Figure 2).
  - o Excavation of the rerouted drainage channel will occur first so that it can be completed, and made functional in order to reroute the drainage pattern from the Plant Site in the early stages of the grading activity.

- o The power block laydown will be located adjacent to the power block while the solar field laydown will relocate as the solar field work progresses.
- o The purpose is to limit the amount of travel between the laydown and the work area.
- Estimated Cut Volume: Pine Tree Creek is located within the Plant Site and will be rerouted in the initial stages of construction, as described above, to accommodate construction activities within the Plant Site. It is anticipated that the grading development will be performed generally in a north to south pattern. The estimated cut volume for the rerouted drainage channel is 1,690,000 cubic yards and the estimated cut volume for the remaining Plant Site is 3,470,000 cubic yards. Assuming that the cut over one half of the site (one half cut, one half fill) and the depth of cut is somewhat uniform, there will be approximately 67,000 cubic yards of material to cut in each 15 acre area. The excavated material from the rerouted wash will be placed and compacted within areas of the development that require fill to establish design grades, but will not necessarily be used to fill the existing drainage corridor. This will occur in order to maintain a drainage course until the excavation of the rerouted wash can be completed.
- Erosion Control and Channel and Bank Stabilization: Erosion control will be accomplished by the installation of mat liners, hydro-seeding, and native vegetation, rock rip-rap, gravel bags, straw wattles, and cobbles to dissipate velocity and to protect the edges of the channel at strategic locations. Also, straw bales and silt fences will be utilized during construction. The inside and outside banks of the main channel and low flow channel will be lined with rip-rap at high-energy areas susceptible to greater erosion as shown in the plans. The rip-rap will range in size between No. 1 Backing Class to Light Class. The rip-rap shall be placed along the channel floor and up the channel sides to estimated freeboard depth, only in the areas most susceptible to erosion and scour during storm events (refer to supplemental package submitted on August 26, 2008).
- Soils/Organics/Debris: Materials suitable for compaction will not be stored. Materials suitable for compaction will be excavated during the grading operation, transported directly to a fill location, and will be spread and compacted. The debris and organics storage piles will be covered by tarps prior to being hauled off site or being re-spread on site. Organics can be chipped/ground and spread outside the power block and solar area. Debris will be temporarily stockpiled and will be hauled to an appropriate landfill for disposal when the quantity warrants.

• Solar Field Drainage: The solar field will be graded generally following the existing contours of the site. Runoff from the solar field area will drain by sheet flow to shallow diversion swales running in the east-west direction to the dry wash channel and a detention area in the northeast section of the solar field (see Figure DS4 in Attachment 6). The swales are shown on the civil grading plans which were included in the supplemental response dated August 18<sup>th</sup>, 2008.

The proposed power block area is centrally located within the solar field at the Plant Site and includes the cooling tower. The power block area will drain to the south and east away from equipment foundations, by means of sheet flow and swales, as needed. The runoff will then flow through ditches to relocated Pine Tree Creek Wash to the south.

• Outlet: As the low flow channel approaches the concrete structure it will gradually transition from a 60 foot wide channel to a 400 foot wide channel. In addition to widening, the depth of the channel will transition from 1.5 feet in depth to 0 feet in depth. The low flow channel will end at the concrete outlet structure. The structure will consist of 2 foot high by 15 foot wide blocks set at 15 foot spacing. The blocks will be placed along the 2055 contour. The openings between the blocks will allow low flows to pass through them, slowing and dissipating energy at the same time. Below the concrete outlet structure there is approximately 3000 feet of desert conditions before the flows leave the project property limits. As the flows spread out from channelized flow to sheet flow, water velocity will decrease from 12 fps to 5.2 fps.

### **Construction Related Mitigation Activities**

- Hand Seeding in Wash Bottom: Once contour grading is complete in the rerouted wash mitigation area, hand-seeding with an alluvial fan scrub mix will occur during the rainy season (between November and February) in scattered locations totaling approximately 4.8 acres within the 18.4 acre mitigation area. Seed will be spread evenly and raked into the top 0.25" of top soil.
- Invasive Weed Control and Trash Removal: Invasive, non-native weeds will be controlled when they occur in or adjacent to (within 10 feet) the 18.4 acre mitigation site. The non-native weeds will be controlled by herbicide spraying or hand-pulling, and will be controlled prior to seed set to reduce competition with native plants. All weed debris will be collected and properly disposed of offsite.

• **Erosion Control:** Erosion control will be performed as necessary within and adjacent to the mitigation area. Erosion control materials may include natural fiber matting, rock or rip-rap, straw wattles, vegetation bundles, gravel bags, gully repair, collection/retrieval of sediment, and seeding.

## BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

# APPLICATION FOR CERTIFICATION FOR THE BEACON SOLAR ENERGY PROJECT

DOCKET NO. 08-AFC-2

### PROOF OF SERVICE

(Revised 10/27/08)

<u>INSTRUCTIONS</u>: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

### CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 08-AFC-2 1516 Ninth Street, MS-14 Sacramento, CA 95814-5512 docket@energy.state.ca.us

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Shaelyn Strattan, Project Manager	Public Adviser
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### **DECLARATION OF SERVICE**

I, Lois Navarrot, declare that on October 30, 2008, I deposited electronic copies of the attached Response to the CDFG Letter dated August 8, 2008 on the Beacon Solar Energy Project Streambed Alteration Notification No. 2008-0146-R4 in the United States mail at Sacramento. California with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

### OR

Transmission via electronic mail was consistent with the requirements of the California Code of Regulations, title 20, sections 1209, 1209.5 and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

Lois Navarrot

Hois Haverred