**CH2M HILL**
2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833
**Tel 916.286.0224**
**Fax 916.614.3424**



October 22, 2012

427930.DI.DR

Mike Monasmith
Senior Project Manager
Systems Assessment & Facility Siting Division
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

Subject: Data Response, Set 1C-4
Hidden Hills Solar Electric Generating System (11-AFC-2)

Dear Mr. Monasmith:

On behalf of Hidden Hills Solar I, LLC; and Hidden Hills Solar II, LLC, please find attached a copy of Data Response Set 1C-4.

Please call me if you have any questions.

Sincerely,
CH2M HILL

John L. Carrier, J.D.
Program Manager

Encl.

c: POS List
Project file

Data Response Set 1C-4

# Hidden Hills

## Solar Electric Generating System

(11-AFC-2)

## Application for Certification

### Hidden Hills Solar I, LLC; and Hidden Hills Solar II, LLC

October 2012

With Technical Assistance from

CH2MHILL®

IS061411043744SAC

# Hidden Hills Solar Electric Generating System (HHSEGS)

## (11-AFC-2)

## Data Response, Set 1C-4
## (Response to Data Request 87)

Submitted to the

## California Energy Commission

Submitted by

## Hidden Hills Solar I, LLC; and
## Hidden Hills Solar II, LLC

October 22, 2012

With Assistance from

CH2MHILL
2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833

# Contents

# Introduction

Attached is Hidden Hills Solar I, LLC, and Hidden Hills Solar II, LLC (collectively, "Applicant") response to the California Energy Commission (CEC) Staff's Data Request 87 for the Hidden Hills Solar Electric Generating System (HHSEGS) Project (11-AFC-2). The CEC Staff served this data request on November 17, 2011, as part of the discovery process for HHSEGS.

# Biological Resources (87)

## IMPACTS TO STATE JURISDICTIONAL WATERS

**BACKGROUND:** Pursuant to the Warren-Alquist Act, the Energy Commission issues Fish and Game Code Section 1600 Lake and Streambed Alteration Agreements in lieu of CDFG. Because staff will be responsible for verifying information in the agreement, staff requests additional data on existing state waters within the project site. Also, the AFC does not include a description of the anticipated direct, indirect, temporary, and permanent impacts for the temporary construction area and common area.

## DATA REQUESTS

87. For state jurisdictional waters, please provide a table showing expected impact acreages that would be addressed under a state Streambed Alteration Agreement. Please also provide an assessment of what effect the project would have on state waters adjacent to the proposed project site.

**Response**: A Notification of Lake or Streambed Alteration has been prepared and is provided as Attachment DR87-1.

.

# Attachment DR87-1
# Notification of Lake or Streambed Alteration

CH2M HILL
2485 Natomas Park Dr.
Suite 600
Sacramento, CA 95833
Tel 916.920.0300
Fax 916.920.8463

October 22, 2012

California Department of Fish and Game
Lake and Streambed Alteration Program
3602 Inland Empire Boulevard, Suite C-220
Ontario, CA 91764

Attention: Jeff Brandt, 1600 Notification
Tammy Branston

Subject: Hidden Hills Solar Electric Generating System
Notification of Lake or Streambed Alteration

Dear Ms. Branston:

Construction and operation of the Hidden Hills SEGS project could result in changes on up to 23.21 acres of ephemeral streams within the project boundary. These drainages were evaluated during jurisdictional delineations conducted in 2012. Consistent with past practice for California Energy Commission (CEC) jurisdictional projects, enclosed are a complete standard California Department of Fish and Game (CDFG) Notification of Lake or Streambed Alteration form (FG2023) and a check for $8,965.50.

Additional details on existing stream features, project description, vegetation and other biological resources that are present and expected impacts are described in Attachment 1, Supplemental Information. A number of supporting documents are referenced in the Supplemental Information that may be helpful in completing your review. They were previously supplied during the California Energy Commission (CEC) process. For your convenience, copies of a limited number of pertinent reports are included on CD. Because no Streambed Alteration Agreement will be executed between CDFG and the project due to the CEC process, this Notification is being submitted to assist CDFG staff's consultations with the CEC.

Please contact me or Kathy Rose (916-286-0287) if you have questions.

Sincerely,
CH2M HILL

John L. Carrier, J.D.
Program Manager

Enclosures

TRUE WATERMARK PAPER HOLD TO LIGHT TO VIEW HEAT SENSITIVE RED IMAGE DISAPPEARS WITH HEAT

15001

**BRIGHTSOURCE ENERGY, INC.**
(510) 550-8161
1999 HARRISON STREET, SUITE 2150
OAKLAND, CA 94612

Wells Fargo Bank, N.A.

11-24-1210

EZShield™ Check Fraud Protection for Business

10/10/12

PAY TO THE ORDER OF CALIFORNIA DEPT OF FISH AND GAME

$ **8,965.50

Eight Thousand Nine Hundred Sixty-Five Dollars And Fifty Cents********** DOLLARS

Security features. Details on back.

California Dept of Fish and Game
PO Box 944209
Sacramento,CA 94244-2090

MEMO

AUTHORIZED SIGNATURE

⑈015001⑈ ⑆121000248⑆ 4121436612⑈

**BRIGHTSOURCE ENERGY, INC.**

15001

Supplier: California Dept of Fish and Game | Supplier #: 11093 | Check #: 15001 | Check Date: 10/10/12

| Invoice # | Invoice Date | Description | Discount | Payment |
|---|---|---|---|---|
| Ckreq101012 | 10/10/12 | | .00 | 8,965.50 |
| | | Invoice Subtotal | | 8,965.50 |
| | | Check Amount: | | **8,965.50 |

*Notification*

# California Department of Fish and Game Notification of Lake or Streambed Alteration

# Hidden Hills Solar Electric Generating System

Submitted to

California Department of Fish and Game,

Eastern Sierra and Inland Deserts Region

Submitted by

Hidden Hills Solar I, LLC and

Hidden Hills Solar II, LLC,

October 2012

with technical assistance from

CH2MHILL®

2485 Natomas Park Drive Suite 600
Sacramento, CA 95833-2937

# List of Forms, Attachments and Appendixes

| Form/Attachment/ Appendix | Description | CDFG's copy Hard Copy and/or CD |
|---|---|---|
| Form | Notification of Lake or Streambed Alteration | Hard Copy and CD |
| Attachment 1 | Supplemental Information | Hard Copy and CD |
| Appendix A | Figures<br><br>A-1 Vicinity Map<br>A-2 Jurisdictional Water of the State Map<br>A-3 Site Plan and Linear Facilities | Hard Copy and CD |
| Appendix B | Preliminary Delineation of Jurisdictional Waters of the State (URS 2012) | CD |
| Appendix C | Biological Resources Reports<br><br>1 Spring 2011 Botanical Resource Survey of the Hidden Hills Solar Electric Generating System Site (Attachment DR 63-1A, Data Response Set 1B-2) (CH2M HILL, 2011)<br>2 Technical Report: Spring 2011 Offsite Surveys for Special-Status Plants for the Hidden Hills Solar Electric Generating System. (Attachment 63-2, Data Response Set 1B-3) (CH2M HILL, 2012a)<br>3 Technical Report: Late-Season 2010 and 2011 Surveys for Special-Status Plants for the Hidden Hills Solar Electric Generating System (Attachment 63-3, Data Response Set 1B-3) (CH2M HILL, 2012b)<br>4 Presence/Absence Survey for the Desert Tortoise (*Gopherus agassizii*) and other Sensitive Wildlife on the proposed Hidden Hills Ranch Solar Energy Project, San Bernardino County, California (AFC Appendix 5.2F-R1, Data Response Set 1B)<br>5 Resource Summary for Phase I and Phase II Burrowing Owl (*Athene cunicularia*) Surveys on the Proposed Hidden Hills SEGS Project, Inyo County, California (Attachment DR58-1, Data Response Set 1B) | CD |
| Appendix D | Hydrology Reports<br><br>1 Phase 1 Hidden Hills Ranch SEGS – Existing Conditions Hydrologic and Hydraulic Analysis (VTN, 2011a; Appendix 5.15C of AFC)<br><br>2 Hidden Hills Ranch SEGS – Final Post Construction Hydrologic & Hydraulic Analysis (VTN, 2011b; Appendix 5.15E of AFC) | CD |

| FOR DEPARTMENT USE | | | | |
|---|---|---|---|---|
| *Date Received* | *Amount Received* | *Amount Due* | *Date Complete* | *Notification No.* |
| | *$* | *$* | | |

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

**NOTIFICATION OF LAKE OR STREAMBED ALTERATION**

**Complete EACH field, unless otherwise indicated, following the enclosed instructions and submit ALL required enclosures. Attach additional pages, if necessary.**

## 1. APPLICANT PROPOSING PROJECT

| | | | |
|---|---|---|---|
| Name | Hidden Hills Solar I, LLC and Hidden Hills Solar II, LLC, wholly owned subsidiaries of Hidden Hills Solar Holdings, LLC, a wholly owned subsidiary of BrightSource Energy, Inc. | | |
| Business/Agency | Contact: Christopher Moore, Vice President, Project Management, BrightSource Energy, Inc. | | |
| Street Address | 1999 Harrison Street, Suite 2150 | | |
| City, State, Zip | Oakland, CA 94612-3500 | | |
| Telephone | (510) 899-8929 | Fax | (510) 899-6768 |
| Email | CMoore@BrightSourceEnergy.com | | |

## 2. CONTACT PERSON (*Complete only if different from applicant*)

| | | | |
|---|---|---|---|
| Name | John Carrier - CH2MHill | | |
| Street Address | 2485 Natomas Park Drive, Suite 600 | | |
| City, State, Zip | Sacramento, CA 95833-2987 | | |
| Telephone | (916) 286-0224 | Fax | (916) 614-3424 |
| Email | jcarrier@ch2m.com | | |

## 3. PROPERTY OWNER (*Complete only if different from applicant*)

| | | | |
|---|---|---|---|
| Name | The Mary Wiley Trust, Section 20, LLC, and Roland John Wiley Trust. c/o Steven R. Scow, Esq. | | |
| Street Address | 612 S Seventh Street | | |
| City, State, Zip | Las Vegas, NV, 89101 | | |
| Telephone | (702) 385-7269 | Fax | (702) 385-3505 |
| Email | scowlaw@aol.com | | |

## 4. PROJECT NAME AND AGREEMENT TERM

| | | | | |
|---|---|---|---|---|
| A. Project Name | Hidden Hills Solar Electric Generating System (HHSEGS) | | | |
| B. Agreement Term Requested | **X** Regular (*5 years or less*)<br>□ Long-term (*greater than 5 years)* | | | |
| C. Project Term | | D. Seasonal Work Period | | E. Number of Work Days |
| Beginning (*year*) | Ending (*year*) | Start Date (*month/day*) | End Date (*month/day*) | |
| 2013 | 2015 | | | See Attachment 1, Supplemental Information |

## 5. AGREEMENT TYPE

| Check the applicable box. If box B, C, D, or E is checked, complete the specified attachment. | |
|---|---|
| A. | **X** Standard *(Most construction projects, excluding the categories listed below)* |
| B. | □ Gravel/Sand/Rock Extraction (*Attachment A*) *Mine I.D. Number:* _____ |
| C. | □ Timber Harvesting (*Attachment B*) THP *Number:* _____ |
| D. | □ Water Diversion/Extraction/Impoundment (*Attachment C*) *SWRCB Number:* _____ |
| E. | □ Routine Maintenance (*Attachment D*) |
| F. | □ DFG Fisheries Restoration Grant Program (FRGP) *FRGP Contract Number:* _____ |
| G. | □ Master |
| H. | □ Master Timber Harvesting |

## 6. FEES

Please see the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. ***Note: The Department may not process this notification until the correct fee has been***

| | A. Project | B. Project Cost | C. Project Fee |
|---|---|---|---|
| 1 | HHSEGS Phase 1 | >$500,000 | $4,482.75 |
| 2 | HHSEGS Phase 2 | >$500,000 | $4,482.75 |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| | | D. Base Fee *(if applicable)* | |
| | | **E. TOTAL FEE ENCLOSED** | $8,965.50 |

## 7. PRIOR NOTIFICATION OR ORDER

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, the Department for the project described in this notification?

□ Yes (*Provide the information below*) **X** No

Applicant: _____ Notification Number: _____ Date: _____

B. Is this notification being submitted in response to an order, notice, or other directive ("order") by a court or administrative agency (including the Department)?

**X** No □ Yes (*Enclose a copy of the order, notice, or other directive. If the directive is not in writing, identify the person who directed the applicant to submit this notification and the agency he or she represents, and describe the circumstances relating to the order.*)

□ *Continued on additional page(s)*

## 8. PROJECT LOCATION

A. Address or description of project location.

(*Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway*)

The project site occupies approximately 3,096 acres approximately 18 miles south of Pahrump, Nevada, and approximately 45 miles west of Las Vegas, Nevada (see Attachment 1, Supplemental Information, Appendix A, Figure A-1 – Vicinity Map).

Tecopa Road (also known as the Old Spanish Trail Highway) lies along the southern project boundary. Project access will be from Tecopa Road (an existing two-lane paved road) to the project entrance road on the east side of the project. Secondary access will be from Tecopa Road along the west side of HHSEGS, then along the paved road between the two proposed solar plants. During construction, the west road will be the primary point of entry.

The majority of the Project is located on the U.S. Geological Survey (USGS) 7.5-minute Calvada Springs topographic quadrangle, with minor north and southeast portions of the Project on the Mound Spring and Stump Spring topographic quadrangles of the San Bernardino Base Meridian and Township 22 North, Range 10 East within portions of Sections 15, 16, 20, 21, 22, 23, 26, 27, and 28.

Additional project location information can be found in Attachment 1, Supplemental Information, Section 8.

| | |
|---|---|
| B. River, stream, or lake affected by the project. | Several ephemeral drainages (see Appendix A, Figure A-2, Waters of the State; Appendix B, Preliminary Delineation of Jurisdictional Waters of the State; and AFC Appendix 5.2E, Jurisdictional Wetlands Delineation). |
| C. What water body is the river, stream, or lake tributary to? | Pahrump Dry Lake is located approximately 3.0 miles down slope northwest of the project site. |
| D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts? | □ Yes **X** No □ Unknown |
| E. County | Inyo |

| F. USGS 7.5 Minute Quad Map Name | G. Township | H. Range | I. Section | J. ¼ Section |
|---|---|---|---|---|
| Calvada Springs - See 8.A.above and Attachment 1, Supplemental Information, Section 8. | | | | |
| Mound Spring - See 8.A.above and Attachment 1, Supplemental Information, Section 8. | | | | |
| Stump Spring - See 8.A.above and Attachment 1, Supplemental Information, Section 8. | | | | |

**X** *Continued on additional page(s)*

| | |
|---|---|
| K. Meridian (*check one*) | □ Humboldt □ Mt. Diablo **X** San Bernardino |

L. Assessor's Parcel Number(s)

Refer to AFC Appendix 1A, Landowner Information. The list therein contains parcel numbers and property owners within 1000 feet of the HHSEGS project site. The HHSEGS project site land is owned by The Roland John Wiley Trust (Wiley 2011 Trust), The Mary Wiley (1997) Trust, and Section 20, LLC. The parcels owned by those entities can be found on the list.

**X** *Continued on additional page(s)*

M. Coordinates (*If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes)*

| | | | |
|---|---|---|---|
| Latitude/Longitude | *Latitude:* See Attachment 1, Supplemental Information, Section 8. | *Longitude:* See Attachment 1, Supplemental Information, Section 8. | |
| | □ Degrees/Minutes/Seconds | □ Decimal Degrees | □ Decimal Minutes |
| UTM | *Easting:* | *Northing:* | □ Zone 10 □ Zone 11 |
| Datum used for Latitude/Longitude or UTM | □ NAD 27 | **X** NAD 83 or WGS 84 | |

**9. PROJECT CATEGORY AND WORK TYPE** *(Check each box that applies)*

| PROJECT CATEGORY | NEW CONSTRUCTION | REPLACE EXISTING STRUCTURE | REPAIR/MAINTAIN EXISTING STRUCTURE |
|---|---|---|---|
| Bank stabilization – bioengineering/recontouring | X | □ | □ |
| Bank stabilization – rip-rap/retaining wall/gabion | X | □ | □ |
| Boat dock/pier | □ | □ | □ |
| Boat ramp | □ | □ | □ |
| Bridge | □ | □ | □ |
| Channel clearing/vegetation management | X | □ | □ |
| Culvert | X | □ | □ |
| Debris basin | □ | □ | □ |
| Dam | □ | □ | □ |
| Diversion structure – weir or pump intake | □ | □ | □ |
| Filling of wetland, river, stream, or lake | X | □ | □ |
| Geotechnical survey | □ | □ | □ |
| Habitat enhancement – revegetation/mitigation | □ | □ | □ |
| Levee | □ | □ | □ |
| Low water crossing | □ | □ | □ |
| Road/trail | X | □ | □ |
| Sediment removal – pond, stream, or marina | □ | □ | □ |
| Storm drain outfall structure | X | □ | □ |
| Temporary stream crossing | □ | □ | □ |
| Utility crossing : Horizontal Directional Drilling | □ | □ | □ |
| Jack/bore | □ | □ | □ |
| Open trench | X | □ | □ |
| **Other** *(specify)*: | □ | □ | □ |

**10. PROJECT DESCRIPTION**

A. Describe the project in detail. Photographs of the project location and immediate surrounding area should be included.

- Include any structures (e.g., rip-rap, culverts, or channel clearing) that will be placed, built, or completed in or near the stream, river, or lake.
- Specify the type and volume of materials that will be used.
- If water will be diverted or drafted, specify the purpose or use.

Enclose diagrams, drawings, plans, and/or maps that provide all of the following: site specific construction details; the dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; an overview of the entire project area (i.e., "bird's-eye view") showing the location of each structure and/or activity, significant area features, and where the equipment/machinery will enter and exit the project area.

Please see Attachment 1, Supplemental Information, Section 10, for a project description summary.

Additional project description information can be found in AFC Section 2.0, Project Description; AFC Section 3.0,Transmission System Engineering; AFC Section 4.0, Natural Gas Supply.

Photographs of the site are included in the Appendix B, Preliminary Delineation of Jurisdictional Waters of the State; and Appendix A of AFC Appendix 5.2E, Jurisdictional Wetlands Delineation.

There are figures provided in Appendix A of Attachment 1, Supplemental Information, herein. Figure A-1, Vicinity Map; Figure A-2, Waters of the State Map; and Figure A-3, Site Map.

Construction Drawings are included within Appendix I of AFC Appendix 5.15A, Preliminary Construction SWPPP-DESCP (Construction Drainage, Erosion and Sedimentation Control Plan / Stormwater Pollution Prevention Plan); Drawing C-1000 contains an Overall Site Plan; Drawing C-2000 contains an Overall Grading and Drainage Plan, with typical road sections included.

Additional construction drawings are shown on Figure 2.1-2R1 (Site Plan and Linear Facilities), Figure 2.1-3 (Site Plan of Common Area), Figure 2.2-1 (Solar Plant 2, Power Block), Figure 2.2-2a (Solar Plant 2, Elevation), and Figure 2.2-2b (Solar Plant 2, Elevation) of Appendix AFC Section 2.0, Project Description; and Figure 3.2-1 and 3.2-2 in AFC Section 3.0,Transmission System Engineering.

Water pollution control drawings can be found in Appendix A of AFC Appendix 5.15A, Preliminary Construction SWPPP-DESCP.

Design criteria, including types of equipment and materials to be used, can be found in AFC Appendix 2B Structural Engineering Design Criteria; AFC Appendix 2C Mechanical Engineering Design Criteria; AFC Appendix 2D Electrical Engineering Design Criteria; AFC Appendix 2E Control Engineering Design Criteria; AFC Appendix 2F Chemical Engineering Design Criteria; and AFC Appendix 2G Geologic and Foundation Design Criteria.

**X** *Continued on additional page(s)*

B. Specify the equipment and machinery that will be used to complete the project.

Please see Attachment 1, Supplemental Information, Section 10, for a project description summary.

**X** *Continued on additional page(s)*

| | |
|---|---|
| C. Will water be present during the proposed work period (specified in box 4.D) in the stream, river, or lake (specified in box 8.B). | □ Yes **X** No (*Skip to box 11*) |
| D. Will the proposed project require work in the wetted portion of the channel? | □ Yes (*Enclose a plan to divert water around work site*)<br>**X** No |

**11. PROJECT IMPACTS**

A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

Most of the project site will maintain the original grades and natural drainage features present within the project area. Please see Attachment 1, Supplemental Information, Section 11; Appendix B, Preliminary Delineation of Jurisdictional Waters of the State; and AFC Appendix 5.2E, Approved Jurisdictional Wetlands Delineation.

Construction of project facilities will result in permanent impacts on up to 23.21 acres of ephemeral drainages within the project area.

B. Will the project affect any vegetation? **X** Yes (*Complete the tables below*) □ No

| Vegetation Type | Temporary Impact | Permanent Impact |
|---|---|---|
| See Attachment 1, Supplemental Information, Section 11. | Linear feet: _____<br>Total area: _____ | Linear feet: _____<br>Total area: _____ |
| | Linear feet: _____<br>Total area: _____ | Linear feet: _____<br>Total area: _____ |

| Tree Species | Number of Trees to be Removed | Trunk Diameter (range) |
|---|---|---|
| None | | |
| | | |
| | | |

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?

**X** Yes *(List each species and/or describe the habitat below)* □ No □ Unknown
Mojave Desert Tortoise (*Gopherus agassizii*)

**X** *Continued on additional page(s)*

D. Identify the source(s) of information that supports a "yes" or "no" answer above in Box 11.C.

Presence/Absence Survey for the Desert Tortoise (*Gopherus agassizii*) and other Sensitive Wildlife on the proposed Hidden Hills Ranch Solar Energy Project, San Bernardino County, California, in AFC Appendix 5.2F. Also please see Section 11 of Attachment 1, Supplemental Information; Appendix C, Biological Resources Reports; and AFC Section 5.2, Biological Resources.

E. Has a biological study been completed for the project site?

**X** Yes (*Enclose the biological study*) □ No
See AFC Section 5.2, Biological Resources; AFC Appendix 5.2B Potentially Occurring Special-status Wildlife; Appendix 5.2D Golden Eagle Nest Survey Report; AFC Appendix 5.2F, Desert Tortoise Survey Report; Appendix 5.2G Special-status Plant Species Description; and Appendix 5.2H, Avian Point Count Survey Report. Also please see Attachment 1, Supplemental Information, Section 11; and Appendix C, Biological Resources Report.

F. Has a hydrological study been completed for the project or project site?

**X** Yes (*Enclose the hydrological study*) □ No
See AFC Section 5.15, Water Resources; AFC Appendix 5.15C, Preconstruction Hydrology Analysis; and AFC Appendix 5.15E, Final Post Construction Hydrologic & Hydraulic Analysis; and Appendix D Hydrology Reports.

**12. MEASURES TO PROTECT FISH, WILDIFE, AND PLANT RESOURCES**

A. Describe the techniques that will be used to prevent sediment from entering watercourses during and after construction.

Please see Attachment 1, Supplemental Information, Section 12; and AFC Appendix 5.15A, Preliminary Construction SWPPP-DESCP (Construction Drainage, Erosion and Sedimentation Control Plan / Stormwater Pollution Prevention Plan).

**X** *Continued on additional page(s)*

B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources.

Please see Attachment 1, Supplemental Information, Section 12; and AFC Appendix 5.15A, Preliminary Construction SWPPP-DESCP (Construction Drainage, Erosion and Sedimentation Control Plan / Stormwater Pollution Prevention Plan).

**X** *Continued on additional page(s)*

C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

Mitigation and/or compensation measures to protect wildlife and plant resources are under negotiation with CDFG management, and will be driven by an analysis of proposed project impacts.

Section 5.2.9 in the AFC (Mitigation Measures) describes the proposed measures that are intended to avoid, minimize, and mitigate for potential adverse effects of the project to biological resources, and monitor and document the effectiveness of the measures. A Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) will be prepared prior to construction that outlines how the Applicant will implement the mitigation measures. A proposed BRMIMP outline can be found in AFC Appendix 5.2I.

In addition to avoidance and minimization measures, compensatory mitigation will include habitat acquisition to offset direct, indirect, and cumulative impacts to desert tortoise and other special status wildlife species, special status plant species, and ephemeral drainages.

**X** *Continued on additional page(s)*

**13. PERMITS**

List any local, state, and federal permits required for the project and check the corresponding box(es). Enclose a copy of each permit that has been issued.

A U.S. Fish and Wildlife Service, California Department of Fish and Game Incidental Take Permits — **X** Applied □ Issued

B. _____ □ Applied □ Issued

C. _____ □ Applied □ Issued

D. Unknown whether □ local, □ state, or □ federal permit is needed for the project. (*Check each box that applies*)

□ *Continued on additional page(s)*

**14. ENVIRONMENTAL REVIEW**

A. Has a draft or final document been prepared for the project pursuant to the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), California Endangered Species Act (CESA) and/or federal Endangered Species Act (ESA)?

**X** Yes (*Check the box for each CEQA, NEPA, CESA, and ESA document that has been prepared and enclose a copy of each*)

No (*Check the box for each CEQA, NEPA, CESA, and ESA document listed below that will be or is being prepared*)

□ Notice of Exemption
□ Initial Study
□ Negative Declaration
□ Mitigated Negative Declaration
□ Environmental Impact Report
□ Notice of Determination *(Enclose)*
□ NEPA document (*type*): _____
□ CESA document (*type*): _____
□ ESA document (*type*): _____
□ THP/ NTMP
□ Mitigation, Monitoring, Reporting Plan

**X** California Energy Commission Application for Certification is currently being reviewed by CEC.

| | | | |
|---|---|---|---|
| B. State Clearinghouse Number (*if applicable*) | | | |
| C. Has a CEQA lead agency been determined? | **X** Yes (*Complete boxes D, E, and F*) □ No (*Skip to box 14.G*) | | |
| D. CEQA Lead Agency | California Energy Commission | | |
| E. Contact Person | Mike Monasmith, CEC Project Manager | F. Telephone Number | 916-654-4894 |

G. If the project described in this notification is part of a larger project or plan, briefly describe that larger project or plan.

N/A

H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?

□ Yes (*Enclose proof of payment*) **X** No (*Briefly explain below the reason a filing fee has not been paid)*

The filing fee will be paid before the project license is received from the California Energy Commission per Section 21080.5 of the Public Resources Code.

*Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid.*

**15. SITE INSPECTION**

Check one box only.

□ In the event the Department determines that a site inspection is necessary, I hereby authorize a Department representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant the Department such entry.

**X** I request the Department to first contact (*insert name*) Gary Kazio at (702) 726-6749 to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay the Department's determination as to whether a Lake or Streambed Alteration Agreement is required and/or the Department's issuance of a draft agreement pursuant to this notification.

## 16. DIGITAL FORMAT

Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

**X** Yes (Please enclose the information via digital media with the completed notification form)

Documents submitted as part of the Application for Certification (AFC) that are referenced in this notification can be accessed online at the California Energy Commission (CEC) website: http://www.energy.ca.gov/sitingcases/hiddenhills/documents/applicant/afc/.

Also, attached with the notification is a CD with electronic copies of this notification form, Attachment 1 (Supplemental Information), and appendices (Appendix A, Figures; Appendix B, Preliminary Delineation of Jurisdictional Waters of the State; and Appendix C, Botanical Resources Report).

## 17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, the Department may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information in this notification is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the project(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution for undertaking any project not described herein unless the Department has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.

Signature of Applicant or Applicant's Authorized Representative

OCTOBER 9, 2012

Date

CHRISTOPHER MOORE

Print Name

# Attachment 1
# Supplemental Information

# Supplemental Information

The following sections provide supplemental information to support the California Department of Fish and Game (CDFG) Notification of Lake or Streambed Alteration for the Hidden Hills Solar Electric Generating System (HHSEGS) project. The section numbers herein correspond to the sections of the notification form. Figures are included in Appendix A.

A number of documents and technical studies have been prepared and submitted previously to the California Energy Commission (CEC) to support the Application for Certification (AFC) for the HHSEGS project. Included in these documents are additional figures that represent existing conditions and proposed project plans. Documents from the AFC referenced in the sections that follow can be accessed at: http://www.energy.ca.gov/sitingcases/hiddenhills/documents/applicant/afc/.[1]

## Section 1 – Applicant Information

The HHSEGS project is being developed by Hidden Hills Solar I, LLC, and Hidden Hills Solar II, LLC (collectively, the Applicant). Hidden Hills Solar I, LLC, and Hidden Hills Solar II, LLC, are wholly owned subsidiaries of Hidden Hills Solar Holdings, LLC, which is in turn a wholly owned subsidiary of BrightSource Energy, Inc., a Delaware corporation. The Applicant intends to acquire a leasehold estate in privately held land located in the Mojave Desert between Death Valley and the California-Nevada border as the site for their respective solar plants and the common area. The land is owned by The Roland John Wiley Trust, The Mary Wiley Trust and Section 20, LLC and is under an option agreement to lease it to the Applicant.

Additional information is available in Sections 1.1 and 1.7 (Executive Summary) of the AFC.

## Section 4 – Project Name and Agreement Term

### Construction Sequence and Proposed Schedule

Construction of HHSEGS, from perimeter fencing to site preparation and grading, to commercial operation is expected to take place from the first quarter of 2013 to the third quarter of 2015 (29 months total). Major milestones are listed in Table 1; however, the construction order may change. Construction of the common area facilities would occur concurrently with the construction of the first plant. Prior to the start of construction, the site perimeter will be fenced with desert tortoise exclusion fencing, and the area cleared of desert tortoises.

Average and peak workforce is estimated at approximately 1087 and 2293, respectively, consisting of construction craft people, supervisory, support, and construction management personnel onsite during construction. The peak construction site workforce level is expected to occur in month 19 of the 29-month construction period.

[1] Lake and Streambed Alteration Agreements ("LSAA") are governed by Fish and Game Code Section 1600, et seq., the Lake and Streambed Alteration statute. Absent the CEC's preemptive authorities under Public Resources Code Section 25500 et seq., the process of issuance of a Lake and Streambed Alteration Agreement (the "LSAA Agreement Process") would be administered by the California Department of Fish and Game (CDFG). However, in the case of a thermal powerplant within the CEC's jurisdiction, the CEC "stands in the shoes" of CDFG, issuing the LSAA pursuant to the CEC's certified regulatory program. This information is provided in furtherance of the CEC's processing of the Application for Certification for the HHSEGS project.

TABLE 1
**Project Schedule and Major Milestones[2]**

| Activity | Date |
|---|---|
| **Solar Plant 1** | |
| Fencing | First Quarter 2013 |
| Tortoise clearance and begin construction | Second Quarter 2013 |
| Startup and commissioning | First Quarter 2015 |
| Commercial operation | Second Quarter 2015 |
| **Solar Plant 2** | |
| Fencing | First Quarter 2013 |
| Tortoise clearance and begin construction | Third Quarter 2013 |
| Startup and commissioning | Second Quarter 2015 |
| Commercial operation | Third Quarter 2015 |

# Section 8 – Project Location Information

The majority of the project is located on the U.S. Geological Survey (USGS) 7.5-minute Calvada Springs topographic quadrangle, with minor north and southeast portions of the project on the Mound Spring and Stump Spring topographic quadrangles of the San Bernardino Base and Meridian, and Township 22 North, Range 10 East within all or portions of Sections 15, 16, 20, 21, 22, 23, 26, 27, and 28.

TABLE 2
**Latitude and Longitude within HHSEGS Project**

| Area ID | Location | Elevation (ft) | Latitude | Longitude |
|---|---|---|---|---|
| HHSEGS -Northwest | Northwest corner of project boundary. | Approx. 2,598 | 36.015350 | -115.917283 |
| HHSEGS -Northeast | Northeast corner of Project boundary. | Approx. 2,609 | 36.015361 | -115.912472 |
| HHSEGS - Central | Approximate central location of Project area. | Approx. 2,613 | 35.990581 | -115.900906 |
| HHSEGS – Southeast | Southeast corner of Project boundary. | Approx. 2,644 | 35.971894 | -115.881614 |
| HHSEGS – Southwest | Southwest corner of Project boundary. | Approx. 2,597 | 35.971878 | -115.917300 |

Note: World Geodetic System of 1984 (WGS84) datum

Figure A-1 (Vicinity Map) in Appendix A shows the location of the project site. Additional project location information is available in Section 1.5 of the AFC (Executive Summary).

The project site is located in the southern portion of Pahrump Valley, an internally drained basin bounded by the Resting Spring and Nopah Ranges on the west and northwest, by the Kingston Range on the southwest, and by the Spring Mountains on the east. Pahrump Dry Lake lies about 3 miles northwest

[2] Please note that these dates are updated from the project schedule and milestones provided in the AFC.

of the HHSEGS site. To the southeast, a low divide separates Pahrump Valley from Sandy Valley while, to the northeast, another low divide separates it from Stewart Valley. To the north, the Last Chance Range separates the Pahrump Valley from the Amargosa Desert.

The project site is bordered by paved Tecopa Road (also called Old Spanish Trail Highway) to the south, unpaved Quartz Street to the west, Stateline Road running along the California-Nevada border to the east, and an unpaved road along the northern border. Numerous unpaved roads also extend in a north-south and east-west grid pattern across the site from two housing subdivisions that were never constructed. The nearest community to the project site is several dozen residences that comprise Charleston View, immediately south of the project site and Tecopa Road. The closest town is Pahrump, Nevada, located approximately 18 miles north of the project area.

## Existing Surface Water Features

Onsite surface waters include ephemeral streams with single, large channels with well-defined beds and banks, as well as broad, but sometimes weakly expressed, assemblages of shallow braided channels. Channel substrate ranges from silts to sands, and occasionally gravels or cobbles are present. Channel widths range from less than 1 foot wide to approximately 100 feet wide. Ephemeral stream depths are generally less than 1 foot.

Flows within the ephemeral drainages infiltrate quickly in coarse textured sediment as the slope gradient diminishes from east to west; average slope is less than one percent. Several of the ephemeral streams exhibit a braided or anastomose morphology and often interconnect with other nearby ephemeral streams either by natural forces or by following earthen roadways that form a grid over the site (URS, 2011). The site contains substantial disturbed areas; dirt roads have been constructed on the perimeter of subdivided parcels within the project area and have altered the natural hydrology (URS, 2011).

Site drainage is primarily via sheet flow, and runoff eventually discharges into Pahrump Playa located northwest of the project site. In addition, several small alluvial fan-derived desert ephemeral streams carry flows across the state border from Nevada to California on the project site. Flows originate from desert streams draining the mountains to the east, in Nevada, and infiltrate in soils on toeslopes of alluvial fans in California. Ephemeral streams and playas are dry most of the year with surface water present only in response to storm events or snowmelt (URS, 2011). The same plant species identified in uplands also occurred along the drainages. Yet, a slightly higher density of vegetation may be present in the drainages compared to the uplands. There are no wetlands mapped by the National Wetland Inventory within the project boundaries (USFWS, 2011). Surficial cracking was observed in localized areas where water may periodically pond; however, wetland vegetation was not present in these areas.

Table 1 in the Preliminary Delineation of Jurisdictional Waters of the State report (Delineation Report; URS, 2012; Appendix B) summarizes the potential Waters of the State that were delineated on the project site. A total of 28.33 acres of jurisdictional Waters of the State, including single-thread and braided compound channels, were delineated on the proposed project site and within the 250-foot-wide buffer area (23.82 acres within the project site, plus 4.51 acres offsite and within the 250-foot buffer area). Six of the approximately 80 mapped features are depicted as blue line features on the U.S. Geological Survey (USGS) topographic maps, although channel alignments do not necessarily follow USGS mapped flow paths. In a jurisdictional determination issued by the U.S. Army Corps of Engineers on December 14, 2011, two interstate ephemeral drainages were considered waters of the United States to the extent that ordinary high water mark indicators are present. Of the 23.82 acres of potential Waters of the State on the project site, 0.42 acre was identified as waters of the United States (Drainages 24 and 50; see Figures 2C, 2D, 2E, 2G of Appendix B) based on presence of ordinary high water mark indicators.

In subsequent discussions with Regional Water Quality Control Board (RWQCB) and CDFG staff, concurrence was reached with respect to the Delineation Report (URS, 2012). RWQCB and CDFG staff

generally agreed with the Delineation Report, but determined that drainages and pooling areas mapped within maintained roadways would not be considered state jurisdictional waters (total of 3.74 acres). In addition, features mapped as "nonjurisdictional waters" in the preliminary State waters delineation report (i.e., pooling areas, moist pooling areas, alkaline soils areas, sheet flow areas) were confirmed by the agencies as not constituting waters of the State. The CEC and CDFG conducted a site visit to verify the state waters delineation in August 2012. The CEC provided the applicant with data representing 9 additional drainages, adding an additional 3.13 acres of jurisdictional waters of the state within the project boundary. With the addition of the 3.13 acres by the CEC, the areal extent of State jurisdictional waters within the HHSEGS project boundary totals 23.21 acres (23.82 acres – 3.74 acres + 3.13 acres). Figure A-2 depicts waters of the State as verified by the CEC, RWQCB, and CDFG staff. Please refer to Appendix B (Preliminary Delineation of Jurisdictional Waters of the State) and AFC Appendix 5-2E (Jurisdictional Wetlands Delineation) for additional information on the ephemeral drainages onsite. In addition to containing maps of potential State waters, these reports contain photographs of the site and immediately adjacent areas.

# Section 10 – Project Description

The project would develop solar energy generation facilities to provide up to 500 MW (net) of electrical power. Major components of the project include the following:

- Two solar fields and associated facilities: the northern solar plant (Solar Plant 1; 1,483 acres) and the southern solar plant (Solar Plant 2; 1,510 acres)
- A 103-acre common area to be established on the southeastern corner of the site, which would accommodate an administration, warehouse, and maintenance complex, and an onsite switchyard and gas metering station
- A temporary construction laydown and parking area on the west side of the site (180 acres)
- An onsite switchyard in the common area with a generation tie line will cross the state line into Nevada to join the VEA system at a new tap station.
- A gas metering station and 12-inch-diameter natural gas pipeline connecting to the new Kern River Gas Transmission (KRGT) natural gas pipeline
- Access roads and drive zones

Additional project description information can be found in AFC Section 2.0, Project Description; AFC Section 3.0, Transmission System Engineering; AFC Section 4.0, Natural Gas Supply; and in the figures at the end of each of those sections, as well as data responses and supplements that have been filed with the CEC. In addition, updated information can be found in Supplemental Data Response Set 2 and a letter from John Carrier, CH2M HILL to Mike Monasmith, CEC, dated August 10, 2012.

Photographs of the site are included in the Appendix B, Preliminary Delineation of Jurisdictional Waters of the State; and AFC Appendix 5-2E, Jurisdictional Delineation Report.

Construction Details are included in AFC Section 2.0, Project Description; and AFC Section 3.0, Transmission System Engineering; Section 4.0 Natural Gas Supply; as well as in the data responses and supplements that have been filed with the CEC.

Water pollution control drawings can be found in Appendix A of AFC Appendix 5.15A, Preliminary Draft Construction Drainage, Erosion and Sedimentation Control Plan / Stormwater Pollution Prevention Plan (DESCP/SWPPP). Grading and Drainage Plans are found in Attachment I to the DESCP/SWPPP.

Design criteria, including types of equipment and materials to be used, can be found in AFC Appendix 2B, Design Criteria Structural; AFC Appendix 2C, Design Criteria Mechanical; AFC Appendix 2D, Design Criteria Electrical; AFC Appendix 2E, Design Criteria Control; AFC Appendix 2F, Design Criteria Chemical; and AFC Appendix 2G, Design Criteria Geotechnical; AFC Appendix 5.1F, Construction Emissions Analysis.

The processes associated with operation of the HHSEGS project are described thoroughly in the AFC and other documents. The sections below focus on a description of the impacts on ephemeral streams associated with construction and operation of the project.

## Site Preparation

This section describes pre-construction activities that will be conducted on the HHSEGS project site. The DESCP/SWPPP provides recommendations and guidance related to construction when rain is predicted and during rain events. Construction best management practices (BMPs) will be implemented in accordance with the state's General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activity (CGP; State Water Resources Control Board Order No. 2009-0009-DWQ as amended by Order No. 2010-0014-DWQ) requirements for the project and, at a minimum, will be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events. Implementation and maintenance of construction BMPs outlined in the DESCP/SWPPP will minimize impacts to biological resources and water quality both onsite and downstream of the project site.

### Site Access

Project access would be from Tecopa Road to the project entrance road on the east side of the project. Construction access would be from Tecopa Road along the western project boundary.

The proposed locations of the access roads at the site are shown on Figure A-3 (included in Appendix A).

### Temporary Construction Staging/Laydown Area

The 180-acre temporary construction laydown area on the west side of the site will be used for equipment laydown, construction parking, construction trailers, heliostat assembly buildings, and other construction support facilities. The surface areas within the temporary construction area that are used frequently will be stabilized and dust suppression maximized with a layer of crushed stone in areas subject to heavy daily traffic. All facilities in the temporary laydown area will be removed once construction has been completed.

The proposed location of the temporary laydown area is shown on Figure A-3, Site Plan and Linear Facilities (included in Appendix A).

### Fencing

Prior to initiating construction, the site boundary will be enclosed with chain-link fencing for security purposes and desert tortoise exclusionary fencing will be attached to the bottom of the chain link fencing. The first step would include clearing an approximate 12-foot-wide linear swath of vegetation along the entire outer edge of each facility boundary to create an internal perimeter road and install the fencing. The perimeter road would be within the fence line or site boundary. These paths will be grubbed, bladed, and smoothed to facilitate safe use with minimal grading where necessary to cross ephemeral streams. Existing roads will be used as construction corridors for path and fence installation.

Prior to fencing and grubbing of the fencing corridor, the project's Designated Biologist will direct clearance surveys for tortoise within the fence corridor. This will include the clearance of any tortoise burrows within this corridor to ensure that any tortoise present are moved out of harm's way prior to grubbing and fence construction. The fencing will be installed pursuant to the most recent USFWS desert tortoise fencing protocol. Once the site is fully enclosed with fencing, the Designated Biologist or Authorized Biologists will relocate tortoises outside the fenced areas to translocation locations approved by the CEC, CDFG and USFWS. Once the fenced areas are deemed free of desert tortoises, pursuant to the most recent USFWS desert tortoise clearance protocol, then heavy equipment will be allowed to

enter the site to perform earth work such as clearing, grubbing, leveling, and trenching. Following installation, the fencing will be inspected quarterly and after major rainfall events. Any damage to the fencing will be repaired immediately.

Biological monitors will be onsite during all construction activities.

### Clearing and Grading

Clearing and grading activities will be restricted to areas where foundations, drainage facilities, and all-weather roads must be placed. Preparation of these areas would involve land clearing and grading by removing topsoil and vegetation. The surface soil grade of each area will be designed to provide the minimum requirements for access of installation equipment and materials during site construction and operations. Natural drainage features will be maintained to the degree feasible and any grading required will be designed to promote sheet flow where feasible. Areas disturbed by grading and other ground disturbance will be protected from erosion by implementation of appropriate BMPs identified in the Project's Construction DESCP/SWPPP. The Preliminary Draft DESCP/SWPPP is available in Appendix 5-15A in the AFC.

Heavy to medium grading will be performed within each plant's solar power tower and power block areas, for the switchyard, within the administration complex area, and for the heliostat assembly buildings. The deepest excavations will be restricted to foundations and sumps. Within each of these individual areas, earthwork cuts and fills will be balanced to the degree possible. The earthwork within the power blocks and common area will be excavated and compacted to the recommendations of the associated geotechnical report.

At some ephemeral streams, limited grading may be required to allow access on the roads. Surface rocks and boulders will need to be relocated to allow proper installation of heliostats and facilities when they cannot be avoided.

Site grading will be designed to maintain all local materials onsite and attempt to minimize the import of offsite material. The import of suitable stone aggregate or rip-rap may be required if not available onsite given the limited excavation planned. To the extent possible, the site's excavation and embankment volumes will be approximately balanced in an effort to eliminate or minimize the import of material to the site.

Protection of soil resources will be an important factor in the design of the erosion and sedimentation controls. To minimize wind and water erosion, open spaces will be preserved and left undisturbed maintaining existing vegetation to the extent possible with respect to site topography and access requirements.

Areas compacted during construction activities will be restored, as appropriate, to approximate preconstruction compaction levels to minimize the opportunity for any increase in surface runoff.

## Constructed Project Facilities

Specific project features are described below.

### Power Blocks

In each solar plant, one Rankine-cycle steam turbine will receive steam from the solar receiver steam generator (or solar boiler) to generate electricity. The solar field and power generation equipment will start each morning after sunrise and will shut down when insolation drops below the level required to keep the turbine online. To save water in the site's desert environment, each plant will use a dry-cooling condenser. Cooling will be provided by air-cooled condensers, supplemented by a partial dry-cooling system for auxiliary equipment cooling. Raw water will be drawn daily from onsite wells located in each power block and at the administration building. Groundwater will be treated in an onsite treatment system for use as boiler make-up water and to wash the heliostats.

Each of the power blocks will be connected via underground and overhead generation tie (gen-tie) lines to the onsite switchyard in the common area. Each power block will also have a gas metering set. Parking areas will be provided at each power block for operations and maintenance personnel.

The proposed locations of the power blocks are shown on Figure A-3, Site Plan and Linear Facilities (included in Appendix A).

### Common Area

A 103-acre common area will be established on the southeastern corner of the site to accommodate an administration, warehouse, and maintenance complex; an onsite substation; asphalt-paved parking area; and landscape areas. The administration complex will occupy approximately 4.8 acres and will be served by power from the local 33-kV distribution system and water from water supply wells located in the common area.

The common area will also be used for temporary construction parking areas, construction trailers, a tire cleaning station, and other construction support facilities. The surface areas within the common area that are used for construction will be stabilized and dust suppression maximized with a layer of crushed stone in areas subject to heavy daily traffic.

The proposed location of the common area is shown on Figure A-3. Site Plan and Linear Facilities (included in Appendix A).

### Heliostats

Each solar plant will use heliostats—elevated mirrors guided by a tracking system mounted on a pylon—to focus the sun's rays on a solar receiver steam generator atop a tower near the center of each solar field. The heliostats will be installed in two steps. Initially, the support pylons will be installed using vibratory technology to insert the pylons into the ground. Then, the heliostat assembly (mirrors, support structure and aiming system) will be mounted on the pylon. The majority of the project site will maintain the original grades and natural drainage features; therefore, construction will require machines that are maneuverable and can negotiate the terrain. The siting of pylons will be guided by global positioning system (GPS) technology. Pylons will be delivered to their locations by an all-terrain vehicle. Installation of the heliostat assemblies will be accomplished with a rough terrain crane. The crane will be able to mount heliostat assemblies on several pylons before moving to the next location.

The proposed locations of the heliostat arrays are shown on Figure A-3, Site Plan and Linear Facilities (included in Appendix A).

### Roads

The internal roadway and utility corridors for each heliostat field and its power block will contain a 20-foot-wide paved or hardscaped access road from the entrance of the solar plant site to the power blocks, and then around each power block.

In addition to the paved or hardscaped 20-foot-wide access road to the power block of each unit, unpaved roads will radiate out from the power block to provide access through the solar field to the internal perimeter access road. Within the heliostat fields, 10-foot wide "drive zones" will be located concentrically around the power block to provide access to the heliostat mirrors for maintenance and cleaning. The drive zones will be located approximately 152 feet apart and will be grubbed to remove vegetation and smoothed. A 12-foot-wide unpaved path will be constructed on the inside perimeter of the project boundary fence for use by HHSEGS personnel to monitor and maintain perimeter security and tortoise exclusion fencing. These paths will be grubbed, bladed, and smoothed to facilitate safe use with minimal grading where necessary to cross ephemeral streams.

The proposed locations of the access roads at the site are shown on Figure A-3 (included in Appendix A).

### Transmission and Generation Tie Lines

Each of the power blocks will be connected via underground and overhead lines to the onsite switchyard in the common area. From the onsite switchyard in the common area, the generation tie line will cross the state line into Nevada to join the VEA system at a new tap station. The proposed location of the generation tie lines and transmission line are shown on Figure A-3, Site Plan and Linear Facilities (included in Appendix A).

### Natural Gas Pipeline

The KRGT pipeline gas pipeline will cross the California-Nevada border and enter the site in the common area where it will connect with an onsite gas metering station. From the onsite metering station in the common area, an underground pipe will be installed along the northeastern border of the Solar Plant 2 solar field. At the road that divides the two solar fields, the pipeline will turn to the southwest and continue to the point where it intersects the road between the two solar plants. At this point, the pipeline will branch with one branch proceeding northwest to Solar Plant 1 and the other southeast to Solar Plant 2. Individual metering sets (including electrical preheaters for the natural gas, pressure reduction equipment, and filter-separator skids) will be installed at each power block to monitor gas usage.

Construction activities related to the onsite metering station and metering sets will include grading a pad and installing above- and belowground gas piping, metering equipment, gas conditioning and pressure regulation equipment, and possibly pigging facilities. A distribution power line for metering station operation lighting, communication equipment, and perimeter chain link fencing for security will also be installed.

The proposed locations of the natural gas system facilities onsite are shown on Figure A-3 (included in Appendix A).

## Construction Equipment

A list of expected onsite construction equipment is presented in Table 3.

TABLE 3
**List of Construction Equipment**

| **Solar Field Assembly and Installation** | **Tower and Boiler Erection** |
|---|---|
| ISO Carrier | Strand Jack System |
| Forklift, 10,000 lb (Propane) | Crawler Crane |
| Air Compressor, 300 cfm | Rough Terrain Picker, 120 ton |
| Grader | Rough Terrain Picker, 50 ton |
| Tractor | Forklift, 10,000 lb |
| Pylon Insertion Rigs | Compressor, 300 cfm |
| | Man Lift |
| | Truck, Semi |
| **Air Cooled Condenser Erection** | **Power Block Erection** |
| Crawler Crane | Crawler Crane |
| Forklft, 50,000 lb | Rough Terrain Crane, 65 Ton |
| Forklift, 10,000 lb | Rough Terrain Crane, 35 Ton |
| Man Lift, 40 ft | Welder, 250 amp |
| Man Lift, 85 ft | Air Compressor, 125 cfm |
| Man Lift, 60 ft | Man Lift, 60 ft |
| Truck, Semi | Man Lift, 85 ft |
| Rough Terrain Picker | Man Lift, 40 ft |
| Air Compressor, 300 cfm | Forklift, 10,000 lb |
| | Rough Terrain Crane, 65 Ton |

TABLE 3
**List of Construction Equipment**

| | |
|---|---|
| **Concrete Batch Plant** | **Site Road Work** |
| Loader | Grader |
| Transmix Trucks | Scraper |
| | Paver |
| **Solar Field Roads Clearing, Grubbing, and Grading** | **Miscellaneous** |
| Grader | Water Truck, 5,000 gal |
| | Pickup Trucks (Gasoline) |
| | AWD Gators (Gasoline) |

## Summary of Land Disturbance

Construction activities will result in temporary, short-term disturbance to limited land areas (see Table 4). These areas will be stabilized upon completion of construction, in accordance with requirements of the CGP. Summary descriptions of impact categories are provided below. Land disturbance during project construction and operation will be minimized to the extent feasible; heliostat placement and road crossings will follow existing contours to the extent possible, and earth movement will only occur where necessary for vehicle maneuvering, ephemeral stream crossings, and building foundations.

**TABLE 4**
**Breakdown of Disturbed Land Area in Acres and by Impact Category**

| Facility | Distance (miles) | Temporary Impacts | Long-term Impacts[b] | TOTAL |
|---|---|---|---|---|
| **Solar Generation Area** | | | | |
| Solar Plant 1 | | | 1,483.1 | 1,483.1 |
| Solar Plant 2 | | | 1,510.1 | 1,510.1 |
| Subtotal Solar Plants | | | 2,993.2 | |
| **Common Area** | | | | |
| Administration/Warehouse | | | 4.8 | 4.8 |
| Substation | | | 3.0 | 3.0 |
| Gas metering Station | | | 0.7 | 0.7 |
| Remaining Construction Area | | | 94.5 | 94.5 |
| **Temporary Construction Laydown Area** | | 180.1 | | 180.1 |
| **TOTAL PROJECT AREA** | | **180.1** | **3,096.2** | **3,276.3** |
| Existing Dirt Roads Onsite[a] | 18.7 | | | (61.0) |
| Orchard & Disturbed Areas Onsite | | | | (16.0) |
| **NET AFFECTED AREA** | | | | **3,199.3** |

[a] Based on geographic information system (GIS) data from aerial photos
[b] Note that land disturbance over the life of the project is considered a "long-term" impact for purposes of the Biological Assessment, but a "permanent" impact for streambed alteration purposes.

1. **Permanently Disturbed Land Areas:** This includes those features that would remain after the HHSEGS project's useful life. However, no facilities are planned to remain, once the project is decommissioned.

2. **Long-term Land Disturbance Areas:** This includes HHSEGS facilities that will remain in place for the project's useful life. Examples include the solar plants, administration/warehouse building, water supply wells, monitoring wells, and utility lines.

3. **Temporary Land Disturbance Areas:** This includes areas that will be used for less than 5 years. Facilities that fall into this category include the utility and roadway construction corridors, portions of the Common Area, and the 180-acre Temporary Construction Area on the west side of the HHSEGS' site that will be used for equipment laydown, construction parking, construction trailers, and other construction support facilities.

4. **Existing Land Disturbance Areas:** Existing onsite disturbance includes 61 acres of existing on-site roads onsite and 16 acres of orchard and other disturbed areas.

## Facility Operation

Because the project will use dry cooling, water consumption will be minimal, up to a maximum of 140 acre-feet/year. The Applicant has also committed to offset its water usage at a 1:1 ratio by the retirement of water rights up-gradient. This 1:1 retirement will actually result in a net benefit to the aquifer, and the Applicant expects to use somewhat less water each year[3]. The onsite groundwater production wells will supply both solar plants and the administration complex with make-up water, mirror-wash water, and domestic water. Each solar plant will include a water treatment and deionizing facility in the power block area. No reject streams from water treatment are planned to be generated onsite under the treatment scheme. A thermal evaporator system will be used to reduce the volume of the process wastewater stream or stormwater streams that cannot be recycled back to the service water tank. The reject from the thermal evaporator will be trucked offsite for disposal at an approved facility.

Each solar plant and the administration complex will include a septic tank and leach field system for sanitary streams, including showers and toilets. When needed, septic tank contents will be removed from the site by a sanitary service.

Operation and maintenance requirements necessitate the washing of the solar heliostats on a nightly basis (all heliostats are washed about once every 2 weeks). Maintenance roads would be used to access heliostat arrays for washing. BMPs for the use of wash water are outlined in the DESCP/SWPPP. The water used for this process will be of relatively high quality but will contain trace amounts of chemicals such as oxygen scavengers that are not expected to result in substantial changes in water quality. A pressure washer or other method will be used to wash the heliostats to minimize the amount of water used, and no water will run offsite as a result of these washing activities. Due to the high evaporation rates in the area, and the minimal amount of water used, it is likely that wash water will evaporate at or just below the ground surface. By implementing good engineering practices and BMPs in the project design and operation, and because stormwater discharge during construction will adhere to a DESCP/SWPPP and to state and federal water quality standards, no significant impacts to surface or subsurface water quality are expected during construction or operation of the project.

Heliostat wash water will not be collected for disposal and is expected that the wash water will evaporate at or near the ground surface.

## Facility Decommissioning

When the facility is permanently closed, the closure procedure will follow a site-specific closure plan. Because the conditions that would affect the decommissioning decision are largely unknown at this

[3] The 140 AFY provides a reasonable and prudent margin to allow the power plant to operate. Thus, each and every year that the project operates below its maximum permitted usage of 140 AFY, the groundwater basin will be a net "positive" because the retirement of 140 AFY is in perpetuity. In a simple equation, each year the basin will be net positive as follows: 140 AFY retired at 1:1 minus actual water usage below the maximum equals net benefit recharge to the groundwater basin.

time, the specific procedures for decommissioning will be largely dependent upon the laws, ordinances, regulations, and standards in place at the time of decommissioning. The facility will comply with conditions of certification imposed by the CEC to ensure proper decommissioning of the facility.

# Section 11 – Project Impacts on Waters of the State

This section evaluates the temporary and permanent impacts expected to occur on ephemeral streams during project construction and operation, which would be subject to CDFG jurisdiction under the Lake and Streambed Alteration Agreement (LSAA) program (note that "long-term" land disturbance as described above is considered to be a "permanent" impact, as applied to streambed alteration within the HHSEGS site).

CDFG's LSAA process is intended to protect "fish and wildlife resources." Section 1600 of the Fish & Game Code begins with this statement: "The Legislature finds and declares that the protection and conservation of the fish and wildlife resources of this state are of utmost public interest." Thus, the LSAA process is focused on impacts to "fish and wildlife resources." A linkage to fish and wildlife resources is necessary in order for stream disturbance from a project to be regulated under the LSAA program. Because ephemeral streams on the HHSEGS site do not support fish or other aquatic resources, the jurisdictional connection to the HHSEGS site with regards to the LSAA process is "wildlife." Because there has been no linkage established between individual streams and the project's effects on fish and wildlife functions and values of those streams, it is difficult to determine direct and indirect effects on stream functions and, consequently, to quantify the area of streambed disturbance subject to the LSAA program. In addition, the site contains substantial areas that have been disturbed previously as part of planned development; dirt roads have been constructed on the perimeter of subdivided parcels within the project area and interfere with the natural stream hydrology and other functions.

A total of 23.21 acres of jurisdictional state waters (ephemeral stream) are present on the HHSEGS site. The paragraphs that follow provide a general discussion regarding potential on-site ephemeral stream impacts.

## Temporary Impacts on Waters of the State

Temporary impacts are short-term disturbances within ephemeral streams that are associated with construction activities (up to 5 years), and include activities that take place in the construction corridor for roads, trenching and installation of utilities, and incidental fill resulting from equipment and foot traffic.

## Permanent Impacts on Waters of the State

Direct physical effects will occur on ephemeral streams due to grading, road creation, filling, mowing vegetation, and traffic over the course of the project lifetime. Where these activities result in disturbance to the bed, channel or bank of ephemeral streams over the life of the project, these impacts are considered to be permanent. Because of the weakly defined nature of the majority of ephemeral stream features on the site, the physical changes resulting from the project may indirectly impact streams due to changes in existing stream hydraulics and hydrology. Because of the shallow depths of many of the onsite ephemeral streams, the affected stream features would be expected to reform naturally and stream functions associated with physical processes (e.g., groundwater recharge) would not be substantially affected. Permanent fill impacts will be minimized by siting project structures and other features to avoid ephemeral streams where possible.

In addition, other types of long-term disturbance, including but not limited to vegetation removal within drainages and exclusion fencing on the project perimeter, represent a permanent impact on streams for which these activities reduce or eliminate existing wildlife functions and habitat associated with those streams. As mentioned above, no formal functional assessment has been performed for onsite ephemeral streams.

## Vegetation Impacts

The vegetation of the Pahrump Valley is composed of natural vegetation types, except in developed areas, where ruderal "weedy" or landscaped vegetation is present. In the vicinity of Pahrump Playa the terrain is barren in the lowest areas, with alkali sink scrub on the lower shoreline of the dry lake. Two natural vegetation types, Mojave Desert scrub and shadscale scrub, are found on the project site and these include a number of associated shrub species. The western half of the project site occurs at the toe of the alluvial fan and edge of the basin sink in siltier and more saline soils. It supports a saltbush scrub dominated by shadscale (*Atriplex confertifolia*). The eastern half of the project, toward the middle portion of the alluvial fan in sandy alluvium, is mapped as a Mojave Desert scrub dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*).

Ruderal vegetation occurs within the site in the abandoned orchard on the west side of the corner of Silver Street and Tecopa Road, and along the southern boundary of the site in the roadsides of Tecopa Road. Eleven species of target noxious weeds were identified and mapped within the site and the 250-foot buffer. Of these 11 species, red brome (*Bromus madritensis* ssp*. rubens*), halogeton (*Halogeton glomeratus*), African mustard (*Malcolmia africana*) and Russian thistle (*Salsola* sp.) were the most abundant and widespread (CH2M HILL, 2011).

No plant species that are federally or state-listed, proposed or candidate for listing as threatened, endangered or rare were found within the HHSEGS site or within the 250-foot buffer. Eleven "special-status" plants were identified during the 2011 and 2012 surveys. Information on `status plants can be found in:

(1) Spring 2011 Botanical Resource Survey of the Hidden Hills Solar Electric Generating System Site (Data Response Set 1B-2) (CH2M HILL, 2011)

(2) Technical Report: Spring 2011 Offsite Surveys for Special-Status Plants for the Hidden Hills Solar Electric Generating System (Data Response Set 1B-3) (CH2M HILL, 2012a)

(3) Technical Report: Late-Season 2010 and 2011 Surveys for Special-Status Plants for the Hidden Hills Solar Electric Generating System (Data Response Set 1B-3) (CH2M HILL, 2012b)

Figure 3-1 (Vegetation Map) in the "Spring 2011 Botanical Resource Survey of the Hidden Hills Solar Electric Generating System Site" (CH2M HILL, 2011) (Data Response 63-1A) in Appendix C shows the vegetation types mapped at the project site. Subsequent to the vegetation mapping performed during the spring 2011 botanical survey, the vegetation mapping onsite was refined and this updated map is presented in the Desert Tortoise Mitigation Compensation Analysis, Preliminary Staff Assessment Comments, Set 1 (CH2M HILL, 2012). Additional information on the site vegetation onsite can be found in: (1) Spring 2011 Botanical Resource Survey of the Hidden Hills Solar Electric Generating System Site (Attachment DR 63-1A, Data Response Set 1B-2) (Appendix C herein), (2) Appendix B (Preliminary Delineation of Jurisdictional Waters of the State, Attachment DR 88-1, Data Response Set 1C-2), (3) AFC Appendix 5-2E (Jurisdictional Wetlands Delineation), and (4) Desert Tortoise Mitigation Compensation Analysis, Preliminary Staff Assessment Comments, Set 1 (CH2M HILL, 2012c).

To construct the heliostat array fields located within these sites, some vegetation clearing will occur—but only where necessary to allow for equipment access and stormwater management. In areas where general site grading is not required, vegetation clearing will not occur, except for the drive zones, which will be grubbed, bladed, and smoothed.

An approximate 8- to 12-foot-wide linear swath of vegetation along the entire outer edge of the area to be developed will be cleared and grubbed (but not graded except as required for safe passage of vehicles) to create an internal perimeter path for installation of the tortoise and security fencing. Vegetation clearing, with leveling or grading limited to arroyo walls, will be performed throughout the site beneath the heliostats where the existing vegetative cover will not permit access of installation equipment and materials. Other than access roads and drive zones, when necessary, vegetation will be

cut with a mower to a height of approximately 12 to 18 inches to allow clearance for heliostat function and at the same time leave the soil surface and root structures intact.

Clearing and grubbing, where shrubs including roots are removed, will be performed for maintenance roads for each solar plant, drive zone paths, the power blocks, in the Common Area where existing topography must be modified to make suitable parking, building pads and laydown areas; in areas to be graded at Solar Plant 1 and Solar Plant 2; and to provide access for installation equipment and materials during construction (areas requiring leveling by grading). For all other areas, existing vegetation (and root systems) will be maintained to anchor the soil and reduce the potential for erosion. Where existing site topography is favorable, the natural drainage features will be maintained.

Table 5 below shows anticipated impacts to vegetation communities as a result of implementing the proposed project.

TABLE 5
**Impacts to Vegetation Communities within Onsite Waters of the State**

| Type | Permanent Impact* Area (acre) |
|---|---|
| Mojave Desert Scrub | 20.80 |
| Shadscale Scrub | 2.41 |
| Ruderal/Disturbed | 0 |
| TOTAL IMPACTS | 23.21 |

*Note – Vegetation impacts are considered to be permanent as vegetation will be cleared/mowed during the lifetime of the project. Calculations are based on mapped vegetation communities at the site represented on Figure A-2 in Appendix A herein. (Jurisdictional Waters of the State Map).

### Federal and State Listed Species (Threatened or Endangered Species)

Desert tortoise (*Gopherus agassizii*) is the only state or federally listed species that would be affected by the project, although desert tortoise habitat present on the project site was determined to be of low quality during 2011 field surveys. HHSEGS construction will permanently affect approximately 3,096 acres of desert tortoise habitat through the clearing, grubbing, and mowing of vegetation for the installation of project facilities and structures. Prior to commencing construction activities, impacts to desert tortoise would be mitigated by constructing exclusionary fencing around the entire project boundary, and surveying and relocating/translocating any desert tortoise that are present on the site. The project would result in the loss of burrowing, breeding, and foraging habitat for desert tortoise over the period of project operations.

## Special-Status Species[4] and Habitats

Surveys for special-status plant and wildlife species, noxious weeds, vegetation, and wetlands and waters were performed at the HHSEGS site between fall 2010 and spring 2012. Additional focused surveys onsite for Torrey's jointfir (*Ephedra torreyana*) were performed in 2012. Key findings from these surveys are described below. Additional information on special-status species can be found in AFC Section 5.2, Biological Resources and in the biological resources reports found in Appendix C (CH2M HILL, 2011; CH2M HILL, 2012a, b).

[4] The terms "special status" and "species of special concern" are administrative designations, and carry no formal legal status.

## Special-status Animals

One burrowing owl (*Athene cunicularia*), a CDFG species of special concern, and eight active burrows with burrowing owl sign were observed at the site. Two other burrows were identified in the zone of influence (ZOI). Several other special-status avian species were observed foraging onsite. No live American badgers were observed during the surveys. Eleven American badger burrows (*Taxidea taxus*), a CDFG species of concern, were identified onsite, and one burrow was found in the ZOI.

Mitigation measures will be developed to avoid and minimize impacts to special-status animal species.

## Special-status Plants

No federally or state-listed plant species were observed during floristic surveys at the HHSEGS project site. Eleven special status plants were observed during the fall 2010 and spring 2011 surveys, including:

1. *Acleisanthes nevadensis* [Selinocarpus nevadensis] (desert wing-fruit) CRPR 2.3[5]
2. *Androstephium breviflorum* (pink-flowered androstephium) CRPR 2.2
3. *Astragalus nyensis* (Nye milk-vetch) CRPR 1B.1
4. *Astragalus preussii* var. *preussii* (Preuss' milk-vetch) CRPR 2.3
5. *Astragalus sabulonum* (gravel milk-vetch) CRPR 2.2
6. *Astragalus tidestromii* (Tidestrom's milk-vetch) CRPR 2.2
7. *Chaetadelpha wheeleri* (Wheeler's skeletonweed) CRPR 2.2
8. *Cymopterus multinervatus* (purple-nerve spring parsley) CRPR 2.2
9. *Ephedra torreyana* (Torrey's Mormon-tea) CRPR 2.1
10. *Eriogoum bifurcatum* (Pahrump Valley buckwheat) CRPR 1B.2
11. *Phacelia pulchella* var. *gooddingii* (Goodding's phacelia) CRPR 2.3

## Habitats

Ephemeral streams, although characterized by infrequent and short duration flows, create a mosaic of potential habitat areas due to changes in soil texture, distance, increased moisture and other factors that increase the diversity of vegetation across the landscape. Ephemeral channels can provide important wildlife movement corridors in arid regions because they can contain continuous chains of vegetation that wildlife can use for cover and food (Levick, et al., 2008); however, smaller ephemeral streams on the HHSEGS site have limited wildlife corridor function, since they are very narrow and shallow with plant diversity and density not substantially different than surrounding uplands (see Appendix B, Preliminary Delineation of Jurisdictional Waters of the State; and AFC Appendix 5-2E, Jurisdictional Wetlands Delineation).

According to the USEPA (2008), vegetation in ephemeral stream channels is important for resource retention by protecting soils from wind and water erosion, slowing storm flow velocity, and moderating temperatures. Ephemeral stream vegetation also influences biogeochemical cycles by providing leaf litter along with food and cover for wildlife.

Although vegetation cover/density is slightly higher in and along some of the onsite ephemeral streams, plant species composition does not differ significantly from the surrounding uplands. Therefore, biological diversity is not disproportionately higher in and along the ephemeral streams in relation to the surrounding uplands. Vegetation within and adjacent to some of the ephemeral streams, however, may provide structural elements of food, cover, nesting and breeding habitat, and movement/migration corridors for wildlife that use the site as a whole, including desert tortoise. Since the entire site will be fenced to prevent desert tortoise from migrating into the area, ephemeral streams that could provide wildlife habitat will not be available for wildlife use and will not function as wildlife corridors during project construction and operations. Fencing would effectively reduce the ecosystem connectivity function of ephemeral streams, by putting a barrier to wildlife movement across a substantial portion of the watershed. Because a functional assessment has not been performed and a direct linkage between

[5] CRPR - California Rare Plant Rank, based on the California Native Plant Society (CNPS) Ranking System.

onsite ephemeral stream features and their aquatic life and wildlife functions has not been established, it is not possible to quantify impacts associated with wildlife functions; however, it is clear that the ephemeral stream features present on the site do not have equal potential to be supportive of wildlife functions since many are shallow and poorly expressed in the landscape and have essentially the same vegetation composition as surrounding uplands.

# Section 12 – Measures to Protect Fish, Wildlife, and Plant Resources

Section 5.2.9 in the AFC (Biological Resource Mitigation Measures) describes the proposed measures that are intended to avoid, minimize, and mitigate for potential adverse effects of the project to biological resources and monitor and document the effectiveness of the measures. A Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) will be prepared prior to construction that outlines how the project owner will implement the mitigation measures. A proposed BRMIMP outline can be found in AFC Appendix 5.2I. The BRMIMP will contain mitigation measures related to avoidance and minimization of impacts to the onsite Waters of the State (ephemeral streams).

## Impact Avoidance

The drainages onsite are ephemeral and convey only short duration flows in response to major storm events. Volume and duration of flow would not be substantially altered by the project (VTN, 2011a,b; see Appendix D for hydrology reports). Without mitigation, project construction and operation activities could potentially lead to accelerated erosion and sediment transport, and discharge of pollutants through improper material handling, equipment maintenance and storage. By implementing BMPs that are identified in the DESCP/SWPPP, impacts to ephemeral streams and water quality will be avoided or minimized during construction and operations activities. The draft construction DESCP/SWPPP can be found in AFC Appendix 5-15A. The construction and operations SWPPP/DESCP can be consulted for a thorough description of BMPs to be implemented and monitoring to be undertaken. While there is a potential for impacts to wildlife habitat and special-status species (desert tortoise) associated with the period of operation, avoidance and minimization measures to be implemented in coordination with the CDFG and the CEC will ensure that such potential impacts are mitigated. Development and implementation of construction and operations DESCP/SWPPP, and implementation of mitigation to be specified by the CEC, will ensure that impacts to ephemeral streams are avoided.

The technology proposed for this project allows for several strategies to reduce environmental impacts and take advantage of the site's natural attributes. These include the following.

- Cutting vegetation to a height that will not interfere with construction and operation of the heliostat fields but not clearing or grading the entire field
- Restricting clearing and grading activities to areas where foundations, drainage facilities, and all-weather roads must be placed
- Taking advantage of the natural permeability of the alluvium at the site by minimizing compaction and decompacting soils where necessary
- Implementing a stormwater control design that promotes sheet flow and greater infiltration

## Impact Minimization

In addition to the avoidance measures described above, the following minimization measures will be implemented:

- The majority of the project site will maintain the original grades and natural drainage features and, therefore, will require no added storm drainage control. In limited areas, such as the power blocks, switchyard, heliostat assembly buildings and administrative areas, the stormwater management system will include diversion channels, bypass channels, or swales to direct run-on flow from up-slope areas and run-off flow through and around each facility. Diversion channels will be designed so that a minimum ground surface slope of 0.5 percent will be provided to allow positive, puddle-free drainage. To reduce erosion, storm drainage channels may be lined with a nonerodible material such as compacted rip-rap, geo-synthetic matting, or engineered vegetation. The design will be developed for sheet flow for all storm events less than or equal to a 100-year, 24-hour storm event.
- All surface runoff during and after construction will be controlled in accordance with the requirements of the DESCP/SWPPP, and all other applicable LORS. Please refer to the project Construction DESCP/SWPPP in AFC Appendix 5-15A for complete project detail and thorough description of construction and post-construction BMPs to be implemented. Note that a final DESCP/SWPPP will be prepared by the construction contractor, and the final DESCP/SWPPP will specify BMPs to be implemented based on final construction design.

## Construction BMPs

Summary of Erosion and Sediment Control and Stormwater Treatment Measures

- Open spaces will be preserved and left undisturbed maintaining existing vegetation to the maximum extent possible.
- Compacted areas will be restored, as appropriate, to approximate preconstruction compaction levels.
- Diversion berms will be used to redirect stormwater as required.

Summary of Source Control Measures

- Existing vegetation will be preserved when feasible. Cutting vegetation to a height that will not interfere with construction and operation of the heliostat fields, instead of clearing or grading the entire field.
- Clearing and grading activities will be restricted to areas where foundations, drainage facilities, and all-weather roads must be placed.
- Temporary erosion control measures will be implemented prior to and at regular intervals throughout the defined rainy season, and year-round prior to storm events.
- Flow paths will be controlled by lining channels with a non-erodible material such as compacted riprap, geosynthetic matting, or engineered vegetation.
- Diversion berms or drainage swales will be used, as needed, to redirect stormwater run-on or onsite stormwater flow.
- Non-active areas will be stabilized with effective soil cover (such as aggregate, paving, or vegetation) as soon as feasible.
- Plastic materials will be limited when more sustainable, environmentally friendly alternatives exist.
- Areas will be restored, as appropriate, to approximate preconstruction compaction levels to minimize the opportunity for any increase in surface runoff.

Sediment controls are intended to complement and enhance the selected erosion control measures and reduce sediment discharges from active construction areas.

- Effective sediment perimeter controls will be established and maintained.
- All perimeter controls, runoff control BMPs, and pollutant controls at entrances and exits will be maintained.
- Sediment controls will be implemented at the draining perimeter of disturbed soil areas, at the toe of slopes, and at outfall areas.
- Stone filters and check dams will be strategically placed, as needed, throughout the project site. Stone filters and check dams are not intended to alter drainage patterns but to minimize soil erosion and promote sheet flow.

### Post-Construction BMPs

The majority of the project site will maintain the original grades and natural drainage features and, therefore, will require no added storm drainage control. In limited areas, such as the power blocks, substation, heliostat assembly buildings, and administrative areas, the stormwater management system will include diversion channels, bypass channels, or swales to direct run-on flow from upslope areas and runoff flow through and around each facility. Diversion channels will be designed so that a minimum ground surface slope of 0.5 percent will be provided to allow positive, puddle-free drainage. To reduce erosion, storm drainage channels may be lined with a non-erodible material such as compacted riprap, geosynthetic matting, or engineered vegetation. The design will be developed for sheet flow for all storm events less than or equal to a 100-year, 24-hour storm event. A flood protection earthen berm will be constructed around the unit 1 and 2 power blocks. In addition, there will be regularly scheduled inspections and maintenance of perimeter fencing to ensure debris and other deposits are not building up and potentially compromising the integrity of the fence.

An onsite retention basin will be created along the western site boundary by elevating the western perimeter roadway above existing grade. The location of the basin is provided in Data Response WR-3 (Supplemental Data Response Set 4). The berm created by the elevated roadway will mitigate the increase in peak flows from project development. Post-construction peak runoff from the 24-hour, 100-year storm is expected to be slightly less than preconstruction runoff (10,758 cfs, compared to 10,790 cfs) (AFC Appendix 5-15A).

## LSAA Mitigation

To be consistent with applicable provision of the Fish and Game Code, the Applicant believes that any discussion of mitigation under the LSAA program must first be predicated upon an identification of the "fish and wildlife" resources potentially affected by disturbance within waters of the State on the HHSEGS site. The nature and scope of appropriate mitigation, including, as appropriate, mitigation acreage for permanent impacts on jurisdictional state waters, are currently being discussed among the Applicant, CDFG and CEC staff. Mitigation may take the form of in-perpetuity preservation of an as yet undetermined, appropriate acreage of ephemeral streams having similar functions and values as those that will be permanently affected by the HHSEGS project.

# References Cited

California Department of Fish and Game (CDFG). 2011a. Biogeographic Data Branch. Vegetation Classification and Mapping Program (VegCAMP). List of Natural Communities. September. Available online at: http://www.dfg.ca.gov/biogeodata/vegcamp/natural_communities.asp.

CH2M HILL. 2011. Spring 2011 Botanical Resource Survey of the Hidden Hills Solar Electric Generating System. Attachment DR63-1A. Data collected by GANDA. Prepared for Hidden Hills Solar I, LLC, and Hidden Hills Solar II, LLC.

CH2M HILL. 2012a. Late-Season 2010 and 2011 Surveys for the Special-Status Plants for the Hidden Hills Solar Electric Generating System. Attachment DR63-3. Data collected by GANDA. Prepared for Hidden Hills Solar I, LLC, and Hidden Hills Solar II, LLC.

CH2M HILL. 2012b. Spring 2011 Offsite Surveys for Special-Status Plants for the Hidden Hills Solar Electric Generating System. Attachment DR63-2. Data collected by GANDA. Prepared for Hidden Hills Solar I, LLC, and Hidden Hills Solar II, LLC.

CH2M HILL, 2012c. Desert Tortoise Mitigation Compensation Analysis. Preliminary Staff Assessment Comments, Set 1, July.

Levick, L., J. Fonseca, D. Goodrich, M. Hernandez, D. Semmens, J. Stromberg, R. Leidy, M. Scianni, D. P. Guertin, M. Tluczek, and W. Kepner. 2008. The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-arid American Southwest. U.S. Environmental Protection Agency and USDA/ARS Southwest Watershed Research Center, EPA/600/R-08/134, ARS/233046, 116 pp.

URS. 2011. Approved Jurisdictional Determination Hidden Hills Ranch Solar Project, Inyo County, California.

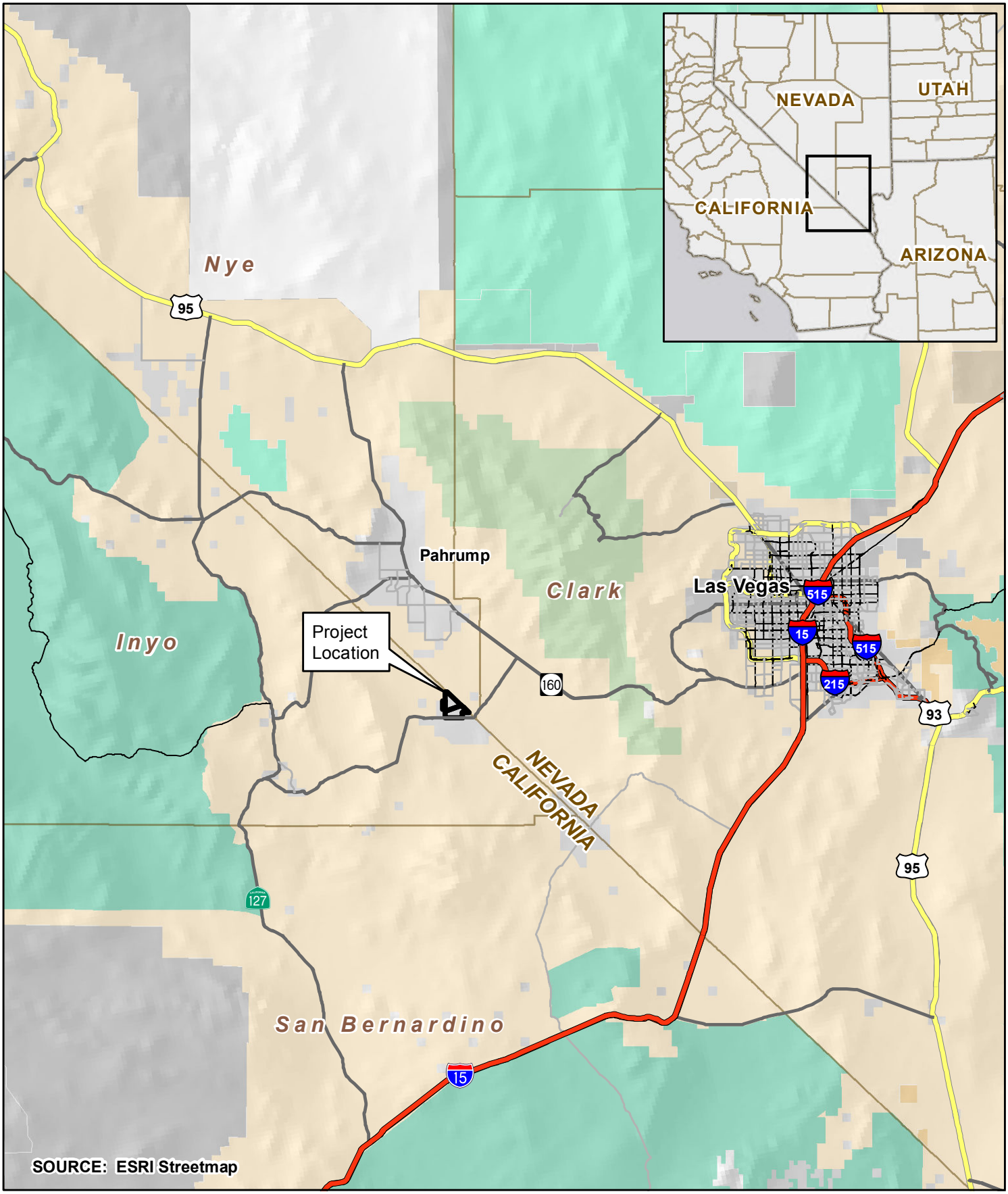
URS. 2012. Brightsource Energy Hidden Hills Solar Project, Inyo County, CA Preliminary Delineation of Jurisdictional Waters of the State. Prepared for BrightSource Energy Inc.

USFWS (United States Fish and Wildlife Service). 2011. Wetlands Mapper. National Wetlands Inventory Center. http://www.fws.gov/wetlands/Data/Mapper.html.

VTN. 2011a. Phase 1 Hidden Hills Ranch SEGS – Existing Condition Hydrologic & Hydraulic Analysis. May 24.

VTN. 2011b. Hidden Hills Ranch SEGS – Final Post Construction Hydrologic & Hydraulic Analysis. September 6.

# Appendix A
# Figures




M.J. Klinefelter
GIS & ENVIRONMENTAL CONSULTING
40960 CALIFORNIA OAKS RD #316
MURRIETA, CALIFORNIA 92562
PH (951) 698-8314 FAX (951) 223-0442

0 15 30 Miles

N

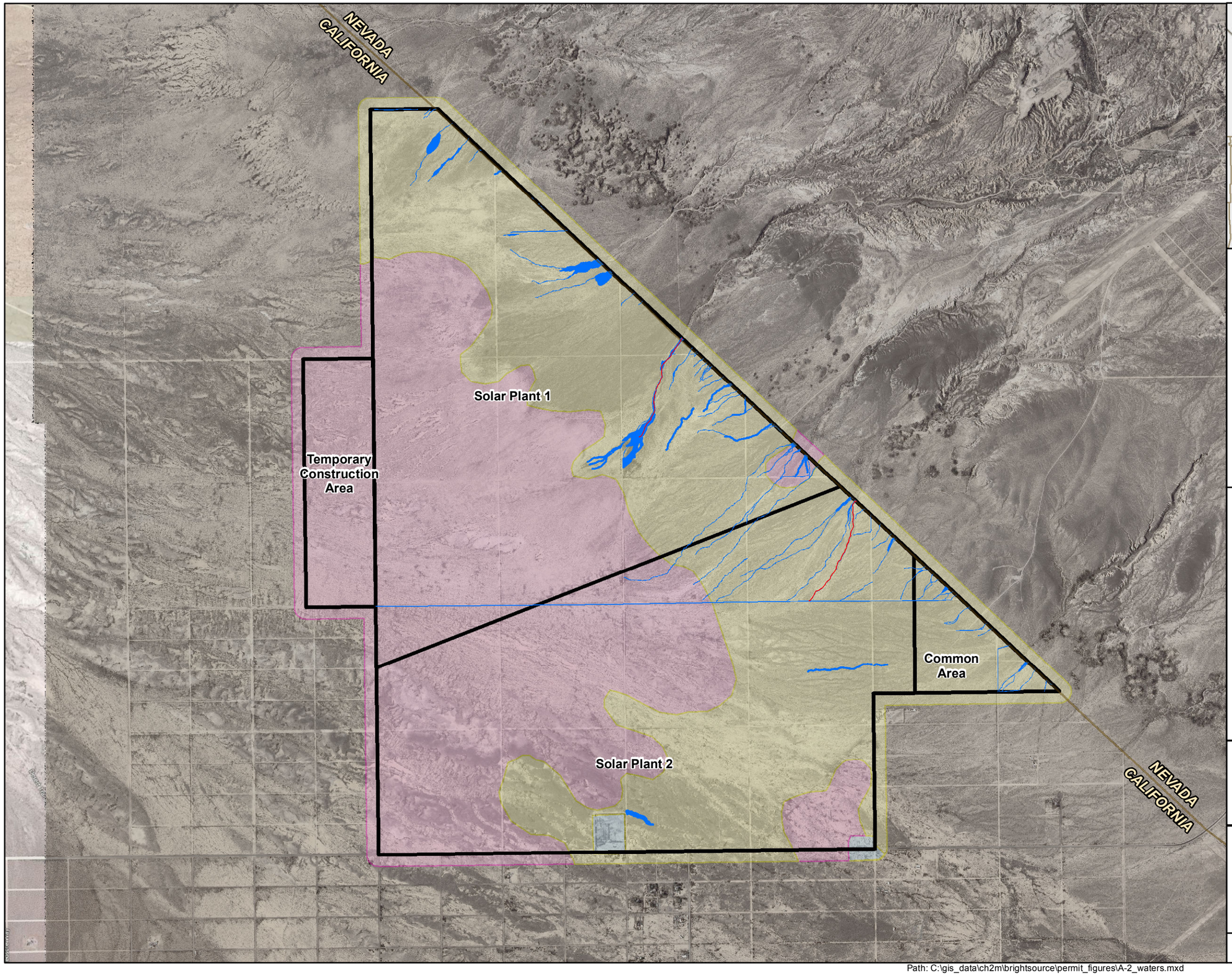
TITLE
**VICINITY MAP**

PROJECT
**HHSEGS Project**
INYO COUNTY, CA

**Figure A-1**

FILE NAME: Path: C:\gis_data\ch2m\brightsource\permit_figures\A-1_Vicinity.mxd

DATE 6/8/2012





Coordinate System:
NAD 1983 UTM Zone 11N
Projection: Transverse Mercator
Datum: North American 1983
Units: Foot US

N

0 1,000 2,000 4,000
Feet

**Legend**

- Waters of the State (23.21 AC)
- Waters of the U.S. (0.42 AC)
- HHSEGS Project Boundary

**Vegetation Types (CH2M Hill 2011)**
**(See Appendix C)**

- Shadescale Scrub
- Mohave Desert Scrub
- Disturbed (excluding roads)

M.J. Klinefelter
GIS & ENVIRONMENTAL CONSULTING
40960 CALIFORNIA OAKS RD #316
MURRIETA, CALIFORNIA 92562
PH (951) 698-8374 FAX (951) 223-0442

# HHSEGS Project Jurisdictional Waters of the State Map

## Figure A-2

Path: C:\gis_data\ch2m\brightsource\permit_figures\A-2_waters.mxd

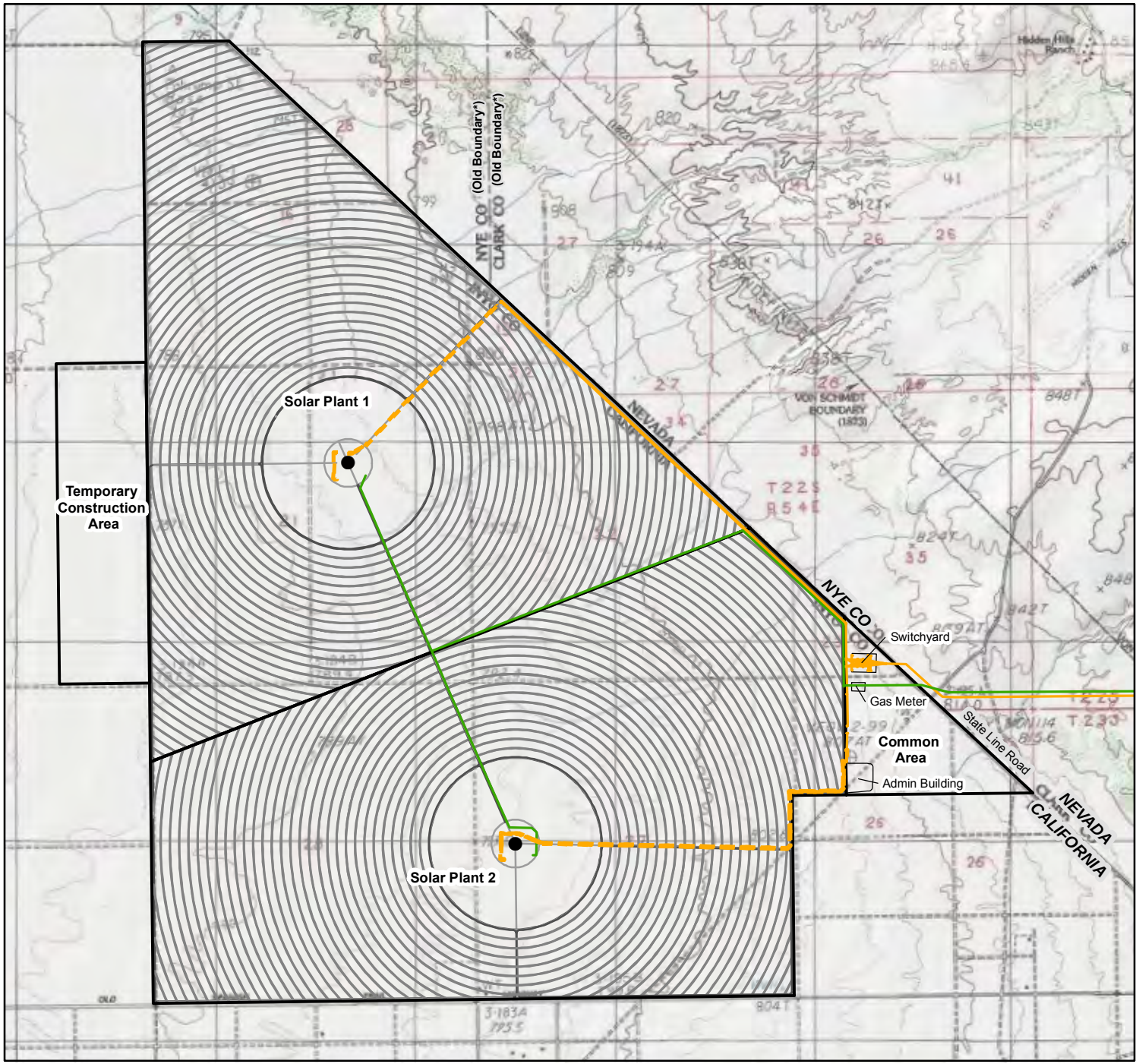



Figure **A-3**
Site Plan and Linear Facilities
*Hidden Hills Solar Electric Generating System*

# Appendix B
# Preliminary Delineation of Jurisdictional Waters of the State

The Preliminary Delineation of Jurisdictional Waters of the State (URS 2012) is Attachment DR88-1 of Data Response Set 1C, filed on March 23, 2012

# Appendix C
# Biological Resources Reports

The Spring 2011 Botanical Resource Survey of the Hidden Hills Solar Electric Generating System Site is Attachment DR63-1A, Data Response Set 1B-2, filed on December 30, 2011.

The Technical Report: Spring 2011 Offsite Surveys for Special-Status Plants for the Hidden Hills Solar Electric Generating System is Attachment 63-2, Data Response Set 1B-3, filed on January 31, 2012.

The Technical Report: Late-Season 2010 and 2011 Surveys for Special-Status Plants for the Hidden Hills Solar Electric Generating System is Attachment DR 63-3, Data Response Set 1B-3, filed on January 31, 2012.

The Presence/Absence Survey for the Desert Tortoise (*Gopherus agassizii*) and other Sensitive Wildlife on the proposed Hidden Hills Ranch Solar Energy Project, San Bernardino County, California is AFC Appendix 5.2F-R1, Data Response Set 1B, filed on December 5, 2011.

Resource Summary for Phase I and Phase II Burrowing Owl (*Athene cunicularia*) Surveys on the Proposed Hidden Hills SEGS Project, Inyo County, California is Attachment DR58-1, Data Response Set 1B, filed on December 5, 2011.

# Appendix D
# Hydrology Reports

The Phase 1 Hidden Hills Ranch SEGS – Existing Conditions Hydrologic and Hydraulic Analysis is Appendix 5.15C of the AFC.

The Hidden Hills Ranch SEGS – Final Post Construction Hydrologic & Hydraulic Analysis is Appendix 5.15E of the AFC.

**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT**
**COMMISSION OF THE STATE OF CALIFORNIA**
**1516 NINTH STREET, SACRAMENTO, CA 95814**
**1-800-822-6228 – WWW.ENERGY.CA.GOV**

***APPLICATION FOR CERTIFICATION FOR THE HIDDEN HILLS SOLAR ELECTRIC GENERATING SYSTEM***

**Docket No. 11-AFC-02**

**PROOF OF SERVICE**
**(Revised 9/20/12)**

APPLICANT
BrightSource Energy
Stephen Wiley
1999 Harrison Street, Suite 2150
Oakland, CA 94612-3500
swiley@brightsourceenergy.com

BrightSource Energy
Bradley Brownlow
Michelle L. Farley
1999 Harrison Street, Suite 2150
Oakland, CA 94612-3500
bbrownlow@brightsourceenergy.com
mfarley@brightsourceenergy.com

BrightSource Energy
Clay Jensen
Gary Kazio
410 South Rampart Blvd., Suite 390
Las Vegas, NV 89145
cjensen@brightsourceenergy.com
gkazio@brightsourceenergy.com

APPLICANTS' CONSULTANTS
Strachan Consulting, LLC
Susan Strachan
P.O. Box 1049
Davis, CA 95617
susan@strachanconsult.com

CH2MHill
John Carrier
2485 Natomas Park Drive, Suite 600
Sacramento, CA 95833-2987
jcarrier@ch2m.com

COUNSEL FOR APPLICANT
Ellison, Schneider and Harris, LLP
Chris Ellison
Jeff Harris
Samantha Pottenger
2600 Capitol Avenue, Suite 400
Sacramento, CA 95816-5905
cte@eslawfirm.com
jdh@eslawfirm.com
sgp@eslawfirm.com

INTERVENORS
Jon William Zellhoefer
P.O. Box 34
Tecopa, CA 92389
jon@zellhoefer.info

Center for Biological Diversity
Lisa T. Belenky, Sr. Attorney
351 California Street, Suite 600
San Francisco, CA 94104
lbelenky@biologicaldiversity.org

Center for Biological Diversity
Ileene Anderson, Public Lands
Desert Director
PMB 447
8033 Sunset Boulevard
Los Angeles, CA 90046
ianderson@biologicaldiversity.org

Old Spanish Trail Association
Jack Prichett
857 Nowita Place
Venice, CA 90291
jackprichett@ca.rr.com

INTERVENORS (con't.)
Cindy R. MacDonald
3605 Silver Sand Court
N. Las Vegas, NV 89032
sacredintent@centurylink.net

Richard Arnold
P.O. Box 3411
Pahrump, NV 89041
rwarnold@hotmail.com

INTERESTED AGENCIES
California ISO
e-recipient@caiso.com

Great Basin Unified APCD
Duane Ono
Deputy Air Pollution Control Officer
157 Short Street
Bishop, CA 93514
dono@gbuapcd.org

County of Inyo
Dana Crom
Deputy County Counsel
P.O. Box M
Independence, CA 93526
dcrom@inyocounty.us

Nye County
Lorinda A. Wichman, Chairman
Board of County Supervisors
P.O. Box 153
Tonopah, NV 89049
lawichman@gmail.com

*indicates change

INTERESTED AGENCIES (con't.)
Nye County Water District
L. Darrel Lacy
Interim General Manager
2101 E. Calvada Boulevard
Suite 100
Pahrump, NV 89048
llacy@co.nye.nv.us

National Park Service
Michael L. Elliott
Cultural Resources Specialist
National Trails Intermountain Region
P.O. Box 728
Santa Fe, NM 87504-0728
Michael_Elliott@nps.gov

*Southern Inyo
Fire Protection District
Larry Levy, Fire Chief
P.O. Box 51
Tecopa, CA 92389
sifpd@yahoo.com

ENERGY COMMISSION – DECISIONMAKERS
KAREN DOUGLAS
Commissioner and Presiding Member
karen.douglas@energy.ca.gov

CARLA PETERMAN
Commissioner and Associate Member
carla.peterman@energy.ca.gov

Ken Celli
Hearing Adviser
ken.celli@energy.ca.gov

Eileen Allen
Commissioners' Technical Advisor for Facility Siting
eileen.allen@energy.ca.gov

Galen Lemei
Advisor to Presiding Member
galen.lemei@energy.ca.gov

Jennifer Nelson
Advisor to Presiding Member
jennifer.nelson@energy.ca.gov

Jim Bartridge
Advisor to Associate Member
jim.bartridge@energy.ca.gov

ENERGY COMMISSION – STAFF
Mike Monasmith
Senior Project Manager
mike.monasmith@energy.ca.gov

Richard Ratliff
Staff Counsel IV
dick.ratliff@energy.ca.gov

Kerry Willis
Staff Counsel
kerry.willis@energy.ca.gov

ENERGY COMMISSION – PUBLIC ADVISER
Jennifer Jennings
Public Adviser's Office
publicadviser@energy.ca.gov

## DECLARATION OF SERVICE

I, Mary Finn, declare that on October 22, 2012, I served and filed copies of the attached Hidden Hills (11-afc-02) Date Response, Set 1C-4, dated October 22, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: www.energy.ca.gov/sitingcases/hiddenhills/index.html.

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(*Check all that Apply*)

For service to all other parties:

__x__ Served electronically to all e-mail addresses on the Proof of Service list;

____ Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses marked *"hard copy required" or where no e-mail address is provided.

*AND*

For filing with the Docket Unit at the Energy Commission:

__x__ by sending an electronic copy to the e-mail address below (preferred method); *OR*

____ by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

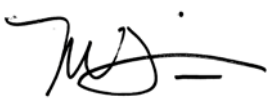
CALIFORNIA ENERGY COMMISSION – DOCKET UNIT
Attn: Docket No. 11-AFC-02
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.ca.gov

*OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:*

____ Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission
Michael J. Levy, Chief Counsel
1516 Ninth Street MS-14
Sacramento, CA 95814
michael.levy@energy.ca.gov

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.



Mary Finn
CH2M Hill