SES Solar One

In Response to CEC and BLM Data Requests 49-70, 74, 75, 80, 82-84, and 86-91

Application for Certification (08-AFC-13)

July 2009

DOCKET
08-AFC-13
DATE JUL 17 2009
RECD JUL 20 2009

Submitted to:
Bureau of Land Management
2601 Barstow Road
Barstow, CA 92311

Submitted to:
California Energy Commission
1516 9th Street, MS 15
Sacramento, CA 95814-5504

Submitted by:
SES Solar Three, LLC
SES Solar Six, LLC

Stirling Energy Systems
4800 N. Scottsdale Road, Suite 5500
Scottsdale, AZ 85251

Tessera Solar™
power from stirling energy systems

July 17, 2009

Mr. Christopher Meyer
Project Manager
Attn: Docket No. 08-AFC-13
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

RE: SES Solar One
Applicant's Responses to CEC and BLM Data Requests Set 1, Part 1
Data Requests 49-70, 74-75, 80, 82-84, and 86-91

Dear Mr. Meyer,

Tessera Solar hereby submits the Applicant's responses to CEC and BLM Data Requests 49-70, 74-75, 80, 82-84, and 86-91 (Data Requests Set 1, Part 1).

I certify under penalty of perjury that the foregoing it true, correct, and complete to the best of my knowledge.

Sincerely,

Camille Champion
Project Manager

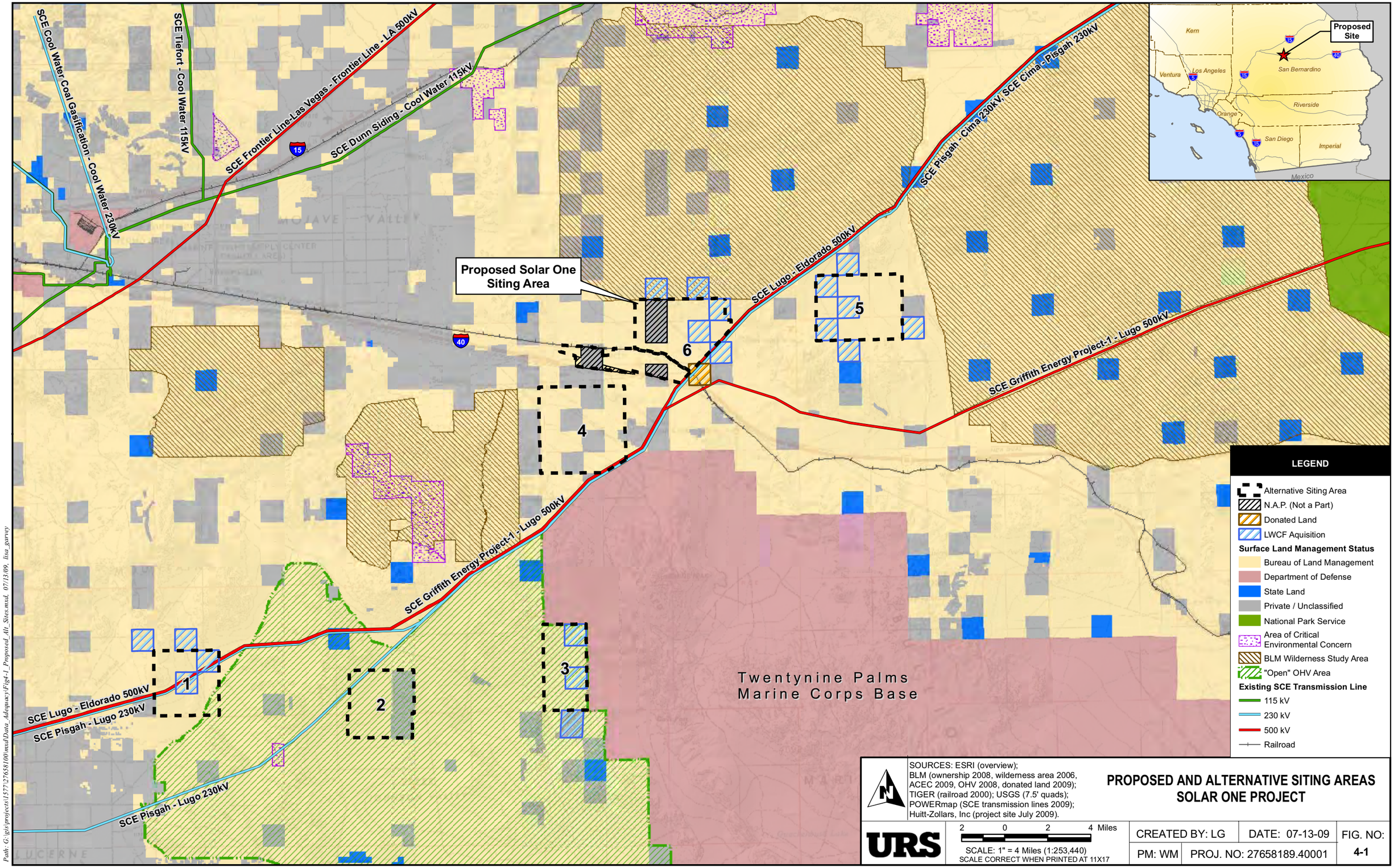
TECHNICAL AREA: ALTERNATIVES

Data Request 49: Please provide a revised Figure 4-1 that:

- Accurately reflects the project outline shown in Figure 1-2.
- Indicates what land within the project boundary is not currently considered part of the project.
- Identifies donated lands and lands acquired within LWCF funds within the project boundary and within any of the alternative sites depicted on Figure 4-1.

Response: Figure 4-1 has been revised and is provided behind this response as attachment ALT-1.

ALT-1



SOURCES: ESRI (overview); BLM (ownership 2008, wilderness area 2006, ACEC 2009, OHV 2008, donated land 2009); TIGER (railroad 2000); USGS (7.5' quads); POWERmap (SCE transmission lines 2009); Huitt-Zollars, Inc (project site July 2009).

PROPOSED AND ALTERNATIVE SITING AREAS
SOLAR ONE PROJECT

URS

2 0 2 4 Miles
SCALE: 1" = 4 Miles (1:253,440)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: LG	DATE: 07-13-09	FIG. NO:
PM: WM	PROJ. NO: 27658189.40001	4-1

Path: G:\gis\projects\1577\27658189\mxd\Data_Adequacy\Fig4-1_Proposed_Alt_Sites.mxd, 07/13/09, lisa_garvey

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 50: Please provide the final determination from the USACE regarding whether or not jurisdiction will be asserted. Should the USACE assert jurisdiction, please explain the project-specific circumstances which would necessitate substantial temporary or permanent impacts to jurisdictional waters.

Response: Jim Mace of the USACE indicated during a telephone conversation on July 6, 2009 that he is processing a non-jurisdictional determination (NJD) for the Solar One Project site and surrounding area. The Applicant will continue to coordinate with the USACE and anticipates a final determination within 30 to 60 days; however, the Applicant cannot control the USACE's schedule for its formal determination. The Clean Water Act Section 404 permit process, including jurisdictional determinations, is a Federal permit process that is separate from the CEC's AFC process and in addition to the BLM's NEPA process. Once a final determination is rendered by the USACE, the Applicant will provide the CEC and BLM with those results. Until that time, it is assumed that the finding of no Federal waters of the U.S. on the Project site is correct and that no temporary or permanent impacts on Federal jurisdictional waters of the U.S. will result from this Project. Impacts on biological resources and jurisdictional waters have been addressed in the AFC and its relevant appendices, regardless of jurisdictional determinations. The Jurisdictional Delineation Report prepared has been provided under separate cover in response to this data request.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 51: Please contact CDFG and provide a record of correspondence regarding the need to complete a Streambed Alteration Agreement. Should a Streambed Alteration Agreement be needed, please explain the project-specific circumstances that would necessitate substantial temporary or permanent impacts to jurisdictional waters of the State.

Response: There is no record of correspondence at this time with the CDFG relative to the need to create a Streambed Alteration Agreement. The Applicant understands that the CEC has provided the CDFG with copies of the AFC and biology technical appendices prepared and docketed to date. The Applicant has also sent the CDFG electronic and hard copies of those documents. The CDFG had not completed review of those documents as of July 2, 2009, although it has indicated that it will begin review during the week of July 6, 2009. It is anticipated that comments may be received near the end of July 2009, or within 30 days. The CDFG must determine if it wishes to assert jurisdiction on drainage features on the Solar One Project site, and it has yet to do so. Until it makes a determination, it is not possible to speculate what features, if any, it may assert jurisdiction on. Once a final determination is rendered by the CDFG, the Applicant will provide the CEC and BLM with those results. Until that time, it is concluded that our preliminary findings are correct and that no Streambed Alteration Agreement is required for this Project. Otherwise, impacts on biological resources and water resources have been addressed in the AFC and its relevant appendices, regardless of jurisdictional determinations.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 52: Please provide a discussion on MFTL impact avoidance and minimization measures to be implemented during operations and maintenance activities.

Response: MFTL occupied habitat will be fenced with a 3-wire fence and appropriate signage indicating that the area contains sensitive resources and is a restricted access area would be provided. Operations staff would be educated regarding protected resource areas and restrictions associated with these areas.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 53: Please provide details on how the evaporation ponds will be designed, built, and operated to discourage wildlife use.

Response: The evaporation ponds will be constructed with two foot horizontal to one foot vertical concrete side slopes, with a 10 ft. wide 4:1 access drive, which is designed to minimize impacts to wildlife. The ponds are to be lined with a gunite, shotcrete or pvc liner, which will be inspected after each cleaning. Monitoring of the evaporations will be done on a quarterly basis, if becomes apparent wildlife is at risk from the ponds, the ponds could be covered to minimize attraction of predator and scavenger species or other methods of access restrictions or deterrent use could be implemented. Perimeter fences and installing of wire mesh screens above the ponds may be utilized. Specific design could be implemented, regarding wire mesh size and fencing design, to ensure that implementation of these exclusion methods will be successful and that smaller wildlife will not be trapped by the pond covers. An adaptive management plan would allow for monitoring and potential adjustment to increase the efficiency of screens or fencing. The pond operating depths are to be minimized to discourage water fowl.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 54: Please provide a detailed monitoring plan for the evaporation ponds, including:

a. A discussion of the frequency and nature of monitoring;

b. Elements that will be monitored (e.g., sodium);

c. A list of resident and migratory species that could be at risk;

d. Remedial actions that could be taken if the ponds become a hazard for wildlife; and

e. Events that might trigger implementation of those remedial actions.

Response: During operation of the Project, trace element concentrations (i.e., selenium, arsenic, boron, and sodium) of the evaporation pond water will be monitored quarterly.

a.) Should the water contain substantial concentrations of trace elements, such as selenium or arsenic, a detailed initial monitoring program of the evaporation pond water will be designed and implemented (Bradford et al. 1991). It would be necessary to characterize water trace element content initially and monitor the pond water quarterly for threshold levels of trace elements that may be harmful to wildlife (i.e., selenium, arsenic, and sodium).

b.) Trace elements that have the potential to harm wildlife and that will be monitored include selenium, arsenic, boron, and sodium.

c.) Waterbirds, doves, and seed-eating songbirds are most at risk from drinking water having high concentrations of trace elements and sodium. The species detected onsite listed below are included in these at-risk groups of birds. The species are presented in Table DR55-1 below.

Table DR55-1
Species Detected Onsite

Scientific Name`	Common Name
Amphilspiza bilineata	black-throated sparrow
Amphispiza belli	sage sparrow
Callipepla californica	California quail
Carpodacus mexicanus	house finch
Junco hyemalis	dark-eyed junco
Spizella passerina	chipping sparrow
Zenaida macroura	mourning dove
Zonotrichia leucophrys	white-crowned sparrow

d.) Remedial actions that could be taken if the ponds become a hazard for wildlife include frequent decanting of the pond water to increase the percent solids and reclaim some of the water, and/or covering the evaporation pond to minimize wildlife access. The cover would be designed to minimize attraction of predator and scavenger species. Wildlife access could also be prevented by constructing

perimeter fences and installing wire mesh screens 5-10 feet above and over the ponds. The mesh screens would be designed to ensure successful exclusion of wildlife, with focus on preventing smaller wildlife from being trapped by the pond covers and waterfowl from becoming more susceptible to predation.

e.) Events that might trigger implementation of the aforementioned remedial actions include results of the quarterly monitoring of the pond water that suggest a high concentration of harmful trace elements or detection of wildlife mortality directly linked to the pond water.

References:

Bradford, D.F., L.A. Smith, D.S. Drezner, and J.D. Shoemaker. 1991. Minimizing contamination hazards to waterbirds using agricultural drainage evaporation ponds. Environmental Management 15 (6): 785-795.

Gordus, A.G., H.L. Shivaprasad, and P.K. Swift. 2002 Salt toxicosis in ruddy ducks that winter on an agricultural evaporation basin in California Journal *of Wildlife Diseases*, 38(1): 124-131.

Stolley, D.S. and C.U. Meteyer. 2004. Peracute Sodium Toxicity in Free-ranging Black-bellied Whistling Duck Ducklings. *Journal of Wildlife Diseases*, 40(3): 571-574.

Windingstad, R.M., F.X. Kartch, R.K. Stroud, and M.R. Smith. 1987. Salt Toxicosis in Waterfowl in North Dakota. Journal of Wildlife Diseases, 23(3):443-446.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 55: Please provide a detailed raven monitoring plan that discusses:

a. How the monitoring and control plan will be coordinated with CDFG and U.S. Fish and Wildlife Service;

b. Area covered by the plan;

c. Potential use of perch-deterrent devices and locations of their installation;

d. Measures that might reduce raven presence and nesting activities (e.g., removing food items, garbage, and access to water);

e. A monitoring plan, including discussion of survey methods and frequency for establishing baseline data on pre-project raven numbers and activities, assessing post-project changes from this baseline, and the funding mechanism for the monitoring plan;

f. Remedial actions that would be employed (e.g., nest removal) if raven predation of MFTL or desert tortoise is detected;

g. The circumstances that would trigger the implementation of remedial actions; and

h. Payment of an in-lieu fee to a third party account established by the USFWS to support a regional raven monitoring and management plan.

Response: A raven monitoring plan has been filed under separate cover in response to this data request. In regards to a payment of an in-lieu fee, the Applicant is willing to have discussions with agencies regarding appropriate mitigation during the discovery process.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 56: Please provide the results of Phase II nesting season and winter burrowing owl surveys.

Response: Burrowing owls were detected at two locations within the Solar One Project area and one location offsite within the Area of Critical Environmental Concern (ACEC) east of the existing transmission line. Owls will be passively excluded from the construction area during the non-breeding season. Phase II nesting season and winter burrowing owl surveys are considered to be unnecessary because their presence onsite is known and the Applicant will complete preconstruction surveys and construction monitoring for the burrowing owls. Preconstruction surveys for owl occupied burrows will be conducted during the non-breeding season 30 days prior to vegetation clearing and any ground-disturbing activities. Unoccupied owl burrows will be collapsed. Construction monitoring will be an ongoing activity to preclude potential take of burrowing owl.

TECHNICAL AREA: EFFICIENCY

Data Request 57: Please provide information on how much hydrogen would be required to initially fill all 36,000 Stirling engines, as well as the project hydrogen supply and storage system.

Response: SES Solar One is scheduled to have a total of 34,000 SunCatchers to produce the Project 850 MWs as discussed in the AFC. The initial volume for the 34,000 SunCatcher Stirling engines and supply system is 54,400 standard cubic feet of hydrogen. The two systems proposed are a k-bottle or a distributed system.

The hydrogen system was described in the AFC as a k-bottle of hydrogen on each Power Conversion Unit (PCU). One hydrogen gas cylinder would contain approximately 195 cubic feet of hydrogen, used to replenish lost hydrogen gas within the gas circuit. Each k-bottle was to be supported from the base of the PCU boom. Each PCU's k-bottle would need to be removed and replaced two times per year.

The Applicant is also considering a distributed system for providing hydrogen to the PCUs, which includes a hydrogen gas supply, storage and distribution system that will be more efficient. This alternative was described in Section 4, Alternatives of the AFC and is described in greater detail below in response to Data Request 59.

TECHNICAL AREA: EFFICIENCY

Data Request 58: Please provide information on how much hydrogen would be required annually to replenish leakage.

Response: The estimated leakage based upon historic data is approximately 200 scf/pcu/year, which is about 7.2 million scf/year for the full 850 MWs.

TECHNICAL AREA: EFFICIENCY

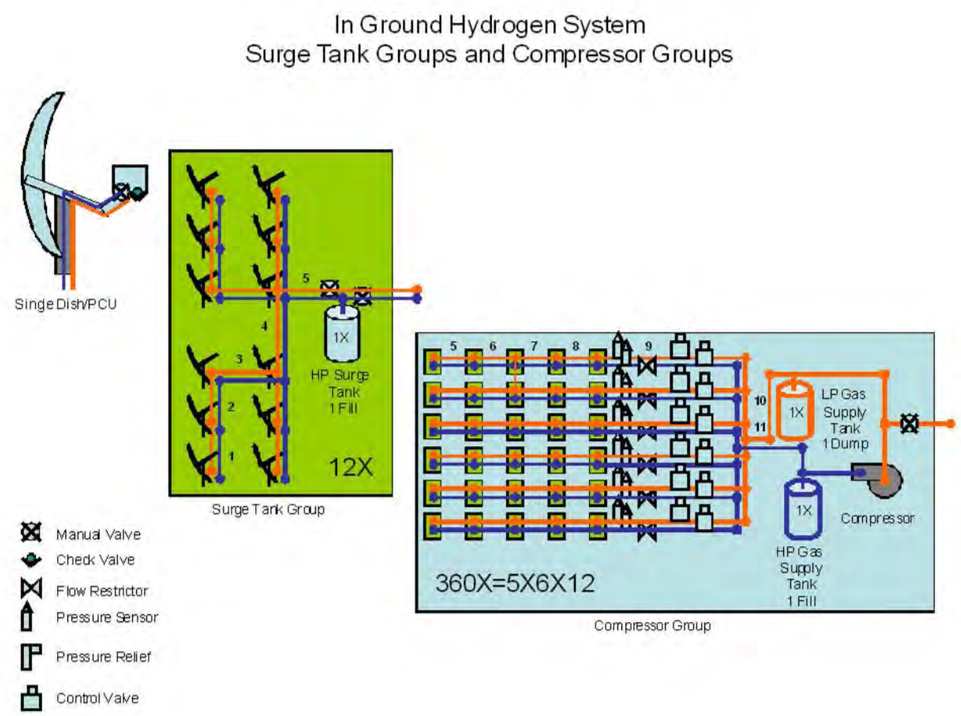
Data Request 59: Please describe the source of hydrogen for the project, including a description of the process employed and the consumption of natural gas and/or electricity by that process.

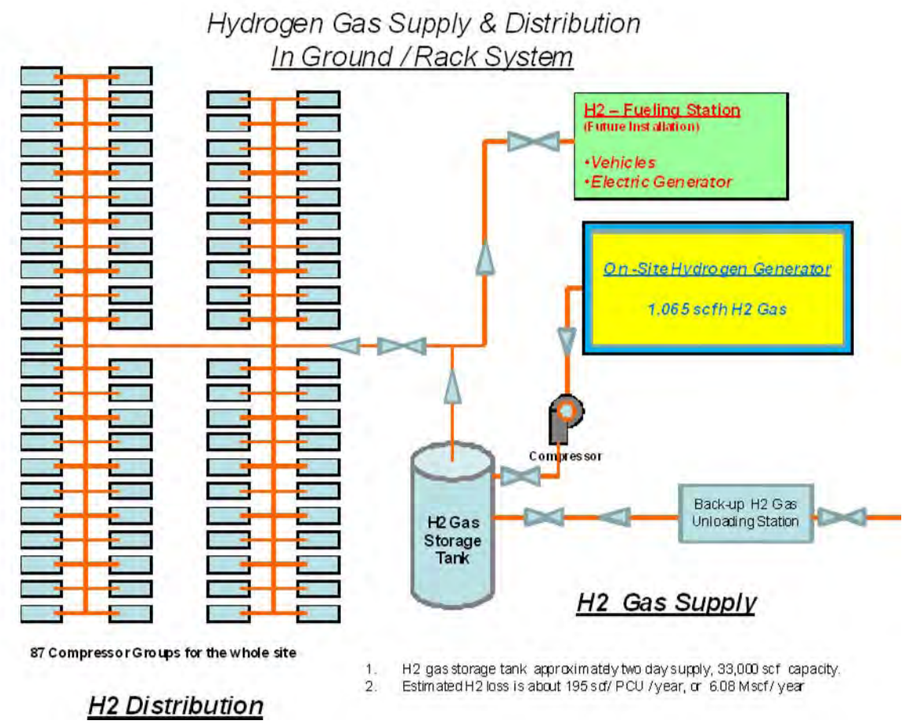
Response: K-Bottles will be provided by a commercial hydrogen supplier. If the Alternative Hydrogen Gas Supply and Distribution System is used, the hydrogen gas supply will come from two redundant hydrogen generators, each capable of producing 1,000 standard cubic feet per hour (scfh), requiring 146 watts/scf and 2.58 cubic inches of water/scf/hour of operation. Approximately 184 gallons of water per day will be required for these generators. The annual power consumption to meet the hydrogen production needs is 100.64 KWH, or 36.64 MW per year.

The hydrogen generator will run 24/7, or as needed, to provide the needed H2 gas to support sun catcher's H2 needs. Power consumption could be 24/7, based on the need of the hydrogen generators. However, these generators will normally be operated at off-peak electric hours using grid power When running the unit at night, unit power will be provided from the grid.

Hydrogen generator requires 100 KWH to run; it will take 4 SunCatchers to support it if run during daylight hours. It will not diminish electrical delivery to SCE. H2 will not be generated from natural gas. The hydrogen gas will be stored in a steel tank. The storage tank will be capable of storing approximately two day supply of hydrogen gas. This is described on attachment EFF-1 provided behind this Response.

EFF-1





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SES Stirling Energy Systems

PROJECT: 2000026801 CAD FILE: S2-C-0712.dwg SHEET SIZE: Arch D (24x36) DWG: S2-C-0712 SHT. 1 REV. A

Figure 1-7
Hydrogen Gas Supply
& Distribution

DRAWING: m:\department\eng\solar 2\temp 030509\s2 guardhouse\s2-c-0712.dwg PLOTTED: 3/16/2009 9:25 AM BY: Greg Loney

TECHNICAL AREA: EFFICIENCY

Data Request 60: Please quantify the amount of electrical energy required to compress the hydrogen to its storage pressure.

Response: The compressors will require approximately 489 kw-hr/day for the total plant's system.

TECHNICAL AREA: GEOLOGY AND PALEONTOLOGY

Data Request 61: Please provide a copy of the archival records search report prepared by the San Bernardino County Museum.

Response: A copy of the archival records search report prepared by the San Bernardino County Museum has been provided in the confidential Response to Data Request 61, filed under separate confidential cover.

TECHNICAL AREA: LAND USE

Data Request 62: Please verify that the "project boundary" is the same as the "amount of land to be fenced" (i.e., 8,230 acres).

Response: The "Project boundary" incorporates all land, which includes public land administered by the Bureau of Land Management (BLM) required for Project development (approximately 8230 acres) and privately owned land (approximately 1280 acres) not a part (NAP) of the Project.

The fence-line boundary includes all land to be developed for the Project totaling 8230 acres.

TECHNICAL AREA: LAND USE

Data Request 63: If private lands are NAP of the project and the entire project boundary only includes BLM-administered public lands, please clarify the reason why portions of the three referenced parcels are shown as within the project boundary on AFC Figure 5.9-3.

Response: The entire Project boundary includes both BLM-administered public lands, and private lands, not a part of the Project.

The reason that the private land described as NAP is included in the Project boundary is that it is our desire to purchase or lease the land for future build-out or mitigation of the Project.

In the event the Applicant is able to purchase or lease the lands, the appropriate permitting steps will be taken at such time as a particular use is determined.

TECHNICAL AREA: LAND USE

Data Request 64: If the privately-owned parcels of land are within the project boundary, please indicate the existing on-site land uses and the planned Project use (including acreages) of the portions of these parcels within the Project Boundary.

Response: The privately-owned parcels of land within the Project boundary are zoned Resource Conservation by the County of San Bernardino. Currently these lands have no onsite structures, and can be categorized as undeveloped open space. The total acreage of the private parcels within the Project boundary is approximately 1280 acres.

The privately-owned parcels of land within the Project boundary will not be used unless the owners desire to sell or lease the land to the Project.

TECHNICAL AREA: LAND USE

Data Request 65: If the privately-owned parcels of land are within the project boundary, please specify if and when the applicant intends to merge the project parcels within the non-BLM portions of project lands into one legal parcel.

Response: If the private parcels are merged, the parcel merger process will occur after rights to the property have been acquired. The Applicant will merge them into one parcel if and when purchases are completed. The Applicant will notify the CEC if and when that occurs and discuss with them the best option for merging them into one parcel.

TECHNICAL AREA: LAND USE

Data Request 66: If the applicant intends to merge the private parcels, when would the parcel merger process be initiated with San Bernardino County? Please provide the timing for completion of this process.

Response: The merger process would take place if and when the parcels have been purchased. This has not occurred. The merging of parcels can begin when all of the parcels meet the following requirements:

1. The parcels are contiguous or adjacent;
2. The ownership of all parcels must be identical;
3. The parcels must be in the same County tax rate area;
4. The taxes are paid and current; and
5. The parcels as merged will not be deprived of legal access as a result of the merger and access to adjoining parcels will not be restricted by the merger.

The processing time for San Bernardino County is 4 to 6 weeks after submittal and the above conditions are met.

TECHNICAL AREA: LAND USE

Data Request 67: If the applicant does not intend to merge the private parcels, please specify the reasons.

Response: In the event that property is purchased, SES will consider a number of factors including setback requirements and taxation in deciding whether to merge the parcels.

In the event that the property owners elect to exercise the lease option, these private parcels will remain under separate ownerships and cannot be merged into one parcel.

TECHNICAL AREA: NOISE AND VIBRATION

Data Request 68: Please provide 25-hour noise measurement data, including L_{eq} and L_{90} values as a minimum for sensitive receptor SR2.

Response: The ambient sound measurement data for SR2 was not available, as indicated in Table 5.12-7 of the AFC, because of the resident's stated opposition regarding the Applicant's requested conduct of a long-term noise survey on his property.

As an alternative at the request of CEC Staff, and to reasonably represent the ambient noise environment at SR2, the Applicant proposes usage of currently available measurement data that was collected during the November 2008 survey period (but not reported in the AFC) at a location west of the Project site and as shown as a pink triangle in attachment NOISE-1. The location (a.k.a., "LT4") appeared to be an abandoned corral, on relatively flat desert topography and at least as distant from Interstate-40 and the rail lines as is the position of SR2 (also shown in NOISE-1). A long-term noise monitor was installed at this LT4 survey location, where the following weather conditions were documented at the start of monitoring on 11:50 a.m., November 5, 2008:

- Average wind speed = 3 mph, from the East
- Temperature = 72 degrees Fahrenheit
- Relative humidity = 24%
- Barometric pressure = 28.4 inches of Hg
- Cloud cover = 0 %

The following Table DR68-1 presents usable data that was collected over approximately eighteen (18) consecutive hours.

Table DR68-1
Hourly Sound Measurement and Statistical Data from LT4

Start Time	One-hour Averages (dBA)			
	L_{eq}	L_{10}	L_{50}	L_{90}
12:00	44.1	45.0	39.3	36.2
13:00	41.3	42.5	37.7	35.6
14:00	47.0	48.5	41.6	37.8
15:00	48.0	51.0	44.1	39.1
16:00	41.9	42.9	39.5	37.1
17:00	35.5	36.5	35.4	35.0
18:00	36.6	38.0	35.7	35.0
19:00	36.9	37.7	36.0	35.1
20:00	36.6	37.0	35.7	35.2
21:00	39.6	40.0	37.5	35.4
22:00	39.2	40.1	37.3	35.4
23:00	38.1	38.1	36.6	35.5
0:00	39.9	40.3	37.1	35.6
1:00	39.6	40.2	37.8	36.3
2:00	37.8	39.1	36.3	35.4
3:00	39.6	41.1	37.7	35.9
4:00	39.1	38.4	37.0	35.7

An unattended Larson-Davis Model 720 (serial number: 0395) Type II Integrating Sound Level Meter (SLM) was the instrument utilized as a noise monitor at this survey location. The one-hour average values shown in Table DR68-1 are calculated from consecutive 5-minute intervals of the measurement period. The SLM was contained in a weatherproof case, with its cable-extended microphone covered with a windscreen and attached to fencing hardware so that its height approximately mimicked the average elevation of the human ear above grade (4-5'). The instrument was field-calibrated before and after the measurement period with an acoustic calibrator (Larson Davis CAL-150).

Sound sources noticed during setup of the monitor at LT4 included distant train noise, distant road traffic noise, aircraft overflights, wind-induced vegetation noise, and birds vocalizing. The measurement period was originally scheduled for a standard 25 hour period, but the battery voltage dropped to a level that was insufficient to power the meter, causing it to shut off during the 19th hour because of extremely cold temperatures during the night.

For convenience, Table DR68-2 provides a summary of daytime, evening, and nighttime average sound levels based on the survey data from Table DR68-1. It is anticipated that these sound levels could be used as a conservative representative sample for SR2, as the location of LT4 is further from existing noise sources (road traffic and rail road) than SR2.

Table DR68-2
Sound Measurement and Statistical Data Summary for LT4

Time Period	Averages (dBA)			
	L_{eq}	L_{10}	L_{50}	L_{90}
Day (12:00 – 19:00)	44.0	43.5	39.0	36.5
Evening (19:00 – 22:00)	37.9	38.2	36.4	35.2
Night (22:00 – 6:00)	39.1	39.5	37.1	35.7

The average levels presented in Table DR68-2 are considerably, and unsurprisingly, quieter than those appearing in Table 5.12-3 of the AFC for long-term monitoring positions LT1, LT2 and LT3. As one would reasonably expect, LT4 exhibits lower levels because it is more distant from dominant sound sources such as road and rail traffic. Since SR2 shares this geographical condition, as well as similar terrain, surroundings, and exposure to intermittent sources (e.g., occasional aircraft overflights), the Applicant believes the survey results of LT4 are a reasonable substitute for ambient measurements

TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 69: Please clarify if the "adjacent well", "nearby existing well" and the "Primary Water Well" are the same well or different wells.

Response: Each of these terms describes different wells. The well locations are shown on attachments SWR-1 and SWR-2. The terms are clarified as follows.

Adjacent Well: This well is located on private land that is not a part of the site (labeled on SWR-1 as Existing Adjacent Well). The depth to groundwater measured in 2008 in this wells was approximately 310 feet. The total well depth is approximately 320 feet.

Nearby Existing Well: According to the BLM, this well is called the Crow Nest Well. It is located on public land approximately 1.5 miles north of the westernmost point of the Project (labeled on SWR-1 as Existing Nearby Well). This well was reported to be approximately 170 feet deep and historically used to support the grazing of livestock and was associated with two 4,500-gallon above ground water tanks (Rotte 2008). URS measured depth to water in this well to be about 130 feet and the total well depth to be approximately 138 feet. Well completion reports are not available from DWR or San Bernardino County for either the adjacent or nearby existing well.

Primary Water Well: Based on the current condition and limited water column in the existing wells, it is anticipated that another well or wells would be needed to provide water supply for facility construction and operations. It is this well or wells that will be installed that are referred to as "primary wells" in the AFC (locations shown on SWR-2).

There are other wells documented in the site vicinity, but these are located more than 1 mile from the site. These wells are shown on SWR-1.

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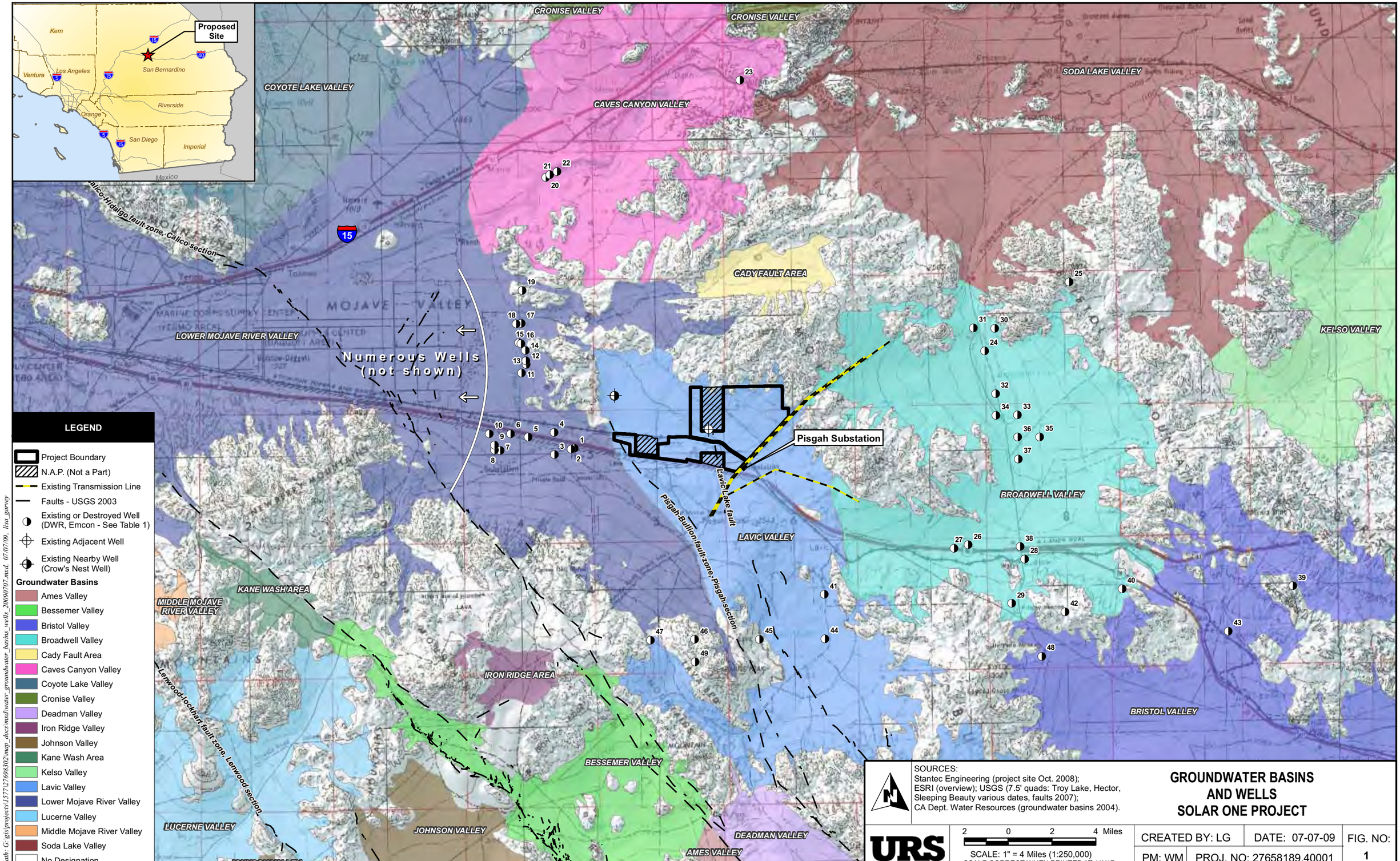
SWR-1



SOURCES:
Stantec Engineering (project site Oct. 2008);
ESRI (overview); USGS (7.5' quads: Troy Lake, Hector, Sleeping Beauty various dates, faults 2007);
CA Dept. Water Resources (groundwater basins 2004).

GROUNDWATER BASINS AND WELLS SOLAR ONE PROJECT

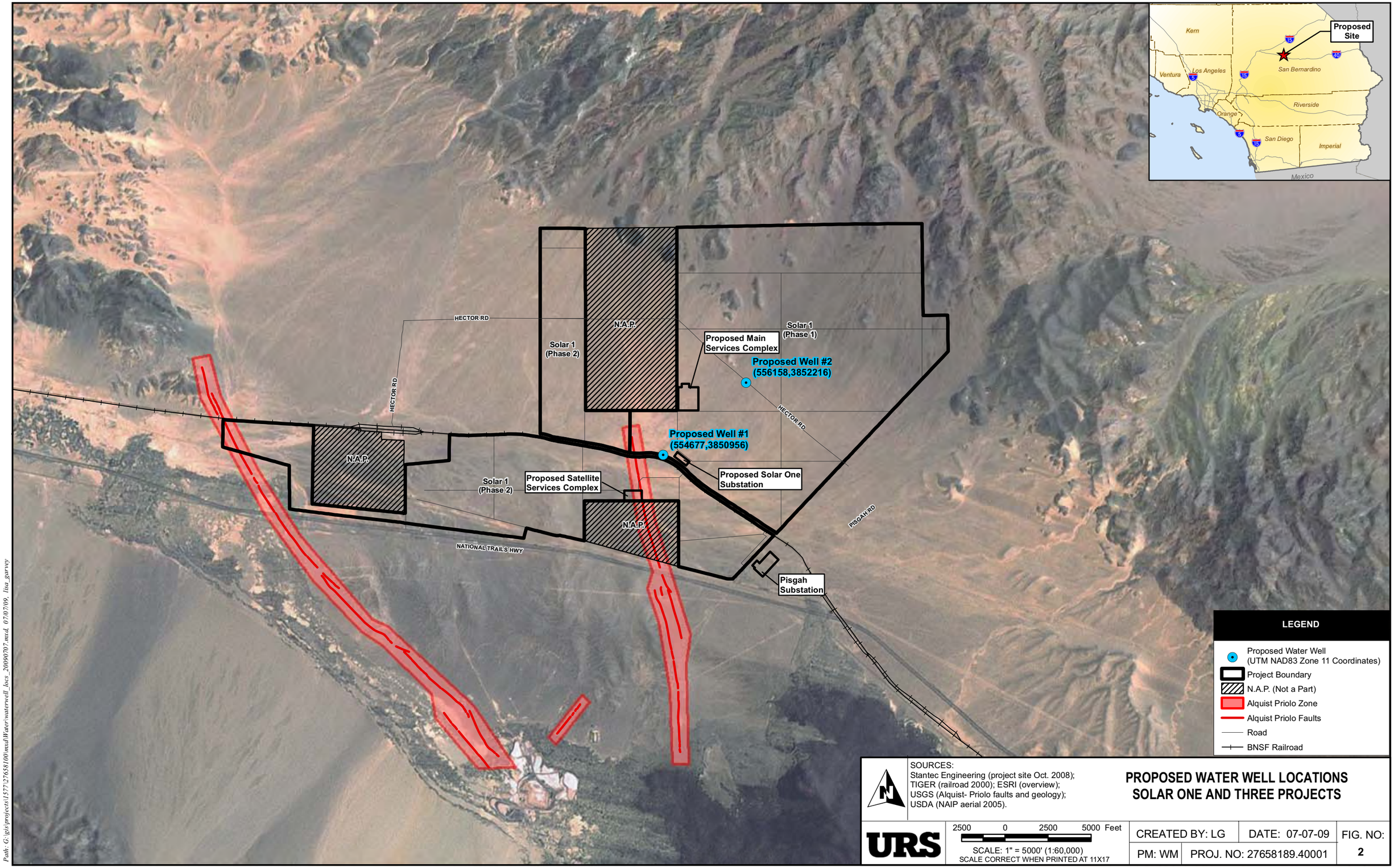
URS

2 0 2 4 Miles

SCALE: 1" = 4 Miles (1:250,000)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: LG	DATE: 07-07-09	FIG. NO:
PM: WM	PROJ. NO: 27658189.40001	1

SWR-2



SOURCES:
Stantec Engineering (project site Oct. 2008);
TIGER (railroad 2000); ESRI (overview);
USGS (Alquist- Priolo faults and geology);
USDA (NAIP aerial 2005).

PROPOSED WATER WELL LOCATIONS
SOLAR ONE AND THREE PROJECTS

URS

2500 0 2500 5000 Feet
SCALE: 1" = 5000' (1:60,000)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: LG	DATE: 07-07-09	FIG. NO:
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TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 70: If the wells are different from each other, please identify the locations of the wells and indicate which well is proposed for project use.

Response: The locations of the existing wells are shown on SWR-1, as described above. The Adjacent Well is located in T9N, R5E Section 33. The Nearby Existing Well is located T8N, R5E Section 1. Both wells are not operational in their current condition. There are two proposed locations for the installation of water supply wells. The preferred location (labeled on SWR-2 as Proposed Well #2) is shown on SWR-2 and is located in T8N, R6E Section 6.

TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 74: Please provide the proposed number of hours per day and number of days per month that water will be used for construction.

Response: Proposed construction watering will be active for 10 hours a day, five days a week. Proposed work week is five days a week. Based on a four week month the number of days per month will be twenty.

TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 75: Please provide the daily, monthly and cumulative volume of water expected to be used during the construction period.

Response: The proposed daily use during constructions is estimated to be 139,000 gal/day. Based upon the estimated daily use the monthly usage is estimated to be 2,780,000 gal/month. The estimated cumulative volume of water based upon the daily usage and a four year construction life will be less than 100,080,000 gallons due to the fact that the majority of the earth moving construction will be accomplished during the first two years of construction. The first two years of construction will include the building pad areas and the major roadways. The SunCatcher field should only require dust suppression water during construction as major cut and fill operations are to occur during the first two years of construction.

TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 80: Please provide a letter of authorization from BNSF indicating their approval of the pipeline being jacked under the railway.

Response: Based on current Project design, a pipeline being jacked under the railway is not anticipated to be required. If necessary, coordination with BNSF will occur and results will be provided to the CEC and BLM upon receipt. A bridge crossing the BNSF railroad will be required for project access. A meeting was held with BNSF on May 24, 2009 to discuss the bridge requirements and design. Construction plans and an exact location are required by BNSF to officially approve a crossing. The location and design of facilities other than the bridge crossing the railroad have not been determined. The applicant will provide a Letter of Authorization from BNSF upon receipt once the crossings have been designed.

TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 82: Please provide a description of these hydrologic features, and determine if they meet the definition of "waters of the US".

Response: No jurisdictional waters of the U.S., the State of California, or Lakes or Streambeds pursuant to the California Department Fish and Game Code have been found on the Solar One Project site. These findings are discussed in the Section 5.6, Biological Resources of the AFC and related technical appendices. As discussed in responses to Data Requests 50 and 51, the Applicant has presented information on drainage features present onsite to the USACE and CDFG, and is waiting for final determinations from those agencies. Jim Mace of the USACE is currently processing a non-jurisdictional determination for waters of the U.S.; however, a final determination may not be rendered for another 30 to 60 days.

TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 83: Please provide a discussion regarding the placement of project structures and appurtenant facilities with regard to the location of these features.

Response: Project structures and appurtenant facilities will not be located within seasonal lakes, and no waters of the U.S. occur onsite.

TECHNICAL AREA: SOIL AND WATER RESOURCES

Data Request 84: Please explain how the seasonal lakes are affected by project site hydrology.

Response: There are no seasonal lakes on the Project site. The seasonal lakes occur west of the Project site, approximately 1 mile from the boundary of the Solar One Project site. These seasonal lakes are not within areas of direct impact from the Project. These seasonal lakes appear to be primarily supported by direct rainfall in many years using USACE hydrogeomorphological (HGM) classifications, and they may also receive surface runoff from several areas during larger storm events (10-year storm event or greater). Groundwater does not appear to be a major factor in the expression of surface water in these seasonal lakes. The Project site drainage system will be designed to avoid adverse hydromodification with regard to off site transport of surface water, and no adverse effect on these seasonal lakes is expected to result from this Project.

The basic storm water system will remain unaffected by the development of the Project. Some stabilization of the alluvial system will occur by the use of a combination of basins, berms or levees, and stabilization of the existing alluvial channel banks. The system will be designed to temper the storm water flows and help to prevent further damage to existing vegetation and the areas around the BNSF facilities. The system will be designed to prevent damage to the SunCatcher field during large storm water flow events. As the seasonal lakes are to the west of the SunCatcher development area, the flows to the area should not be affected.

TECHNICAL AREA: WASTE MANAGEMENT

Data Request 86: Please indicate whether the county of San Bernardino operates a Construction and Demolition Waste Diversion Program.

Response: The San Bernardino Integrated Waste Management Authority (IWMA) does not have a County Demolition Waste Diversion Program. However, San Bernardino County Solid Waste Management Division has developed a Construction & Demolition (C&D) Waste Recycling Guide and Directory, dated 2006. Additionally, the jurisdictions of Apple Valley, Highland, Needles, Ontario, Rancho Cucamonga and Redlands have passed a C&D ordinance. The C&D ordinance applies to construction and renovation projects. Covered projects are required to divert at least 50 percent of the waste generated by the project (San Bernardino County Integrated Waste Management Authority website http://www.iwma.com). The Ordinance is based on the California Waste Management Act of 1989, Assembly Bill 939, requiring each local jurisdiction in the state to divert fifty percent (50%) of discarded materials from landfill disposal.

TECHNICAL AREA: WASTE MANAGEMENT

Data Request 87: Please provide information on how the SES Solar One Project will meet each of the requirements of the program cited in the previous data request.

Response: During construction, wastes will be separated between recyclable and non-recyclable wastes. The anticipated waste streams generated during construction, along with appropriate management methods for treatment or disposal are further described in Section 5.14.2.1, Construction, and Table 5.14-2, Summary of Construction Waste Streams and Management Methods presented in the AFC. The SES Solar One Project will comply with all San Bernardino County requirements regarding C&D waste diversion.

TECHNICAL AREA: WASTE MANAGEMENT

Data Request 88: Please provide information on how the rock crusher/ore process was operated.

Response: Operations of the onsite rock crushing operation was researched as part of the Phase I Environmental Site Assessment (ESA; pages 5-1 and 5-2), dated November 14, 2008 and presented as Appendix M of the Application For Certification (AFC). Based on the information available, it appears that the rock crushing operation onsite may have been associated with the Logan Mine that is documented on published topographic maps of the site and vicinity, approximately 0.5 mile to the north northeast. URS contacted several individuals regarding this mining operation and no one was identified that had firsthand knowledge of its specific operation. Mr. John Clinkenbeard of the California Geological Survey provided some insight to the general processes associated with manganese mining and processing.

Based on observations of the remains of equipment and materials in the area, the process appears to have consisted of mechanical crushing of ore to uniform gravel-sized particles. These remain in several tailings piles. It is not likely that further mineral separation was accomplished using chemicals for floatation or sink-float separation because of the relatively large size of the processed particles. However, there are two shallow depressions (one rudimentary concrete-lined) adjacent to the crusher and it is not known what purpose these features served in ore processing (if any).

TECHNICAL AREA: WASTE MANAGEMENT

Data Request 89: Please provide information on what ores were processed and what methods were used to process the ore and whether there may be conditions that present a health and safety risk.

Response: The ESA reported that the Logan Mine was a surface mine of small production that began operation in 1934. The major commodity recovered was manganese with iron reported as a minor commodity with traces of phosphorus-phosphates, silica and sulfur. Based on the remnants of the equipment present, the ore was processed through mechanical crushing as described above. Observation of current surface conditions provides no visible evidence that the area presents a health and safety risk.

TECHNICAL AREA: WASTE MANAGEMENT

Data Request 90: If hazardous chemicals were used to process the ore, please conduct soil sampling and analysis to screen the site for the presence of these chemicals and determine whether further remedial action is necessary. Depending on the results of the analyses, please provide a preliminary plan for remediation.

Response: The ESA reported that manganese was mined during World War II and it is unlikely that chemical leaching or processing was used because of the additional expense and limited profit margins in small mining operations such as the Logan Mine. Therefore, soil sampling and analysis would not be conducted. Manganese and iron ore production and processing are not generally associated with chemical leaching processes. Based on visual observations of site conditions, the limited size of the former operation and the low likelihood of health and safety risk in the context of construction or site workers, no further action is considered necessary at this time.

TECHNICAL AREA: WASTE MANAGEMENT

Data Request 91: Please estimate the volume of waste that will be generated from dismantling the concrete-lined pond and the rock crusher/ore processing area and identify how it will be disposed of based on the results of further analysis discussed above.

Response: Estimated wastes from dismantling the concrete-lined pond and the rock crusher processing area includes the following:

- **Concrete –** the approximately 20 foot diameter pond (assumes 6-inches thick) = 6 cubic yards of material
- **Lumber –** 8 inch by 8 inch wood beams and smaller lumber = 60 yards
- **Metal –** two partial truck bodies = 20 yards.

During demolition wastes will be separated between recyclable and non-recyclable wastes. The wastes from demolition of the concrete-lined pond and rock crusher/ore processing area will be recycled to the extent possible. Wastes that can not be recycled will be disposed of in a landfill per applicable regulations. The appropriate management methods for treatment or disposal of construction wastes are further described in Section 5.14.2.1, Construction, presented in the AFC.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
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APPLICATION FOR CERTIFICATION
For the SES SOLAR ONE PROJECT

Docket No. 08-AFC-13

PROOF OF SERVICE
(Revised 7/14/09)

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DECLARATION OF SERVICE

I, Corinne Lytle declare that on July 17 , 2009, I served and filed copies of the attached Applicant's Response to CEC and BLM Data Requests, dated July, 2009. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [www.energy.ca.gov/sitingcases/solarone].

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

(*Check all that Apply*)

FOR SERVICE TO ALL OTHER PARTIES:

__X__ sent electronically to all email addresses on the Proof of Service list;

_____ by personal delivery or by depositing in the United States mail at _____ with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses NOT marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

__X__ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

OR

_____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-13
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

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

Original Signed By
Corinne Lytle