URS

1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108
Phone: (619) 294-9400
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LETTER OF TRANSMITTAL

TO: Docket Unit

DATE: November 17, 2009

PROJECT: SES Solar Two

DOCKET	
08-AFC-5	
DATE	NOV 17 2009
RECD.	NOV 18 2009

Enclosed/Attached please find the following:

- RESUBITTAL OF Applicant's Responses to CEC and BLM Data Requests 142-150

For:
- ☐ Review and Comment
- ☐ Signature and Return
- ☐ Appropriate Action
- ☐ As Requested
- ☒ For Your Use

Remarks:

The materials included in this submittal are being re-sent after they were returned to the Applicant. The materials are listed below:

- 12 hard copies of the Applicant's Responses to CEC and BLM Data Requests 142-150
- 12 electronic copies of the Applicant's Responses to CEC and BLM Data Requests 142-150
- 1 original, signed Proof of Service

Please note that the materials in this re-submittal are not confidential and do not qualify for confidentiality under the California Energy Commission Regulations and therefore, cannot be filed under a confidential cover.

If you have any questions or need any further information, please feel free to call. Thank you!

Kindly,

Corinne Lytle
Assistant Project Manager

URS

October 15, 2009

Mr. Christopher Meyer
Project Manager
Attn: Docket No. 08-AFC-5
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: SES Solar Two (08-AFC-5)
Responses to CEC AND BLM Requests 142-150
URS Project No. 27657107.00130

Dear Mr. Meyer:

On behalf of SES Solar Two, LLC, URS Corporation Americas (URS) hereby submits the Applicant's Responses to CEC AND BLM Data Requests (Requests 142-150). Additionally, In Response to CEC and BLM Data Requests 142-150, Volume 2: Site Descriptions, have been docketed under a separate confidential cover.

I certify under penalty of perjury that the foregoing is true, correct, and complete to the best of my knowledge. I also certify that I am authorized to submit the transcript on behalf of SES Solar Two, LLC.

Sincerely,

Angela Leiba
Project Manager

AL:kl

URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108
Tel: 619.294.9400
Fax: 619.293.7920

In Response to CEC & BLM Data Requests 142-150
Volume 1: Data Responses
Application for Certification (08-AFC-5)
SES Solar Two, LLC

Submitted to:
Bureau of Land Management
1661 S. 4th Street, El Centro, CA 92243

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

Submitted by:
SES Solar Two, LLC
2920 E. Camelback Road, Suite 150, Phoenix, AZ 85016

URS With Support From:
URS Corporation

October 2009

TECHNICAL AREA: CULTURAL RESOURCES

Data Request 142: Staff respectfully requests that the applicant conduct a program to revisit the newly found archaeological sites in the proposed project area. The program would entail returning to each site and verifying the accuracy of the extant site documentation. Staff requests that the applicant revisit all of the newly found archaeological sites that the recent field study found to have significantly deficient site documentation (Group III, Lange 2009) and the balance of the archaeological sites that were not subjects of that study.

The verification process would include the close-quarter (< 3 m transect intervals) resurvey and pin flag marking of the artifacts, ecofacts, features, and architectural ruins that make up each site, the re-demarcation of each site boundary, and the boundary of each intrasite material culture concentration and of each potential deposit of anthropogenic sediments. The verification process would then entail checking each site and intrasite boundary for accuracy, and checking the accuracy of the extant documentation on the types and the frequency of the material culture present both across each site and in the intrasite material culture concentrations. Where prior site documentation only notes the material culture classes present on a site or in an intrasite material culture concentration, such as glass, ceramics, or tin cans, the applicant needs to refine the documentation to include material culture types, such as manganese decolorized embossed panel bottle with an applied finish, turquoise Fiesta ware soup bowl rim fragment, or matchstick-filler evaporated milk tin.

Staff recommends that the applicant also use the opportunity of revisiting the newly found archaeological sites to more precisely observe and document the geomorphic context of each site, making use of revised geomorphic conventions to describe project area landforms and subordinate landform features and correlating the sites with the geomorphic mapping units that are the result of the applicant's recent landform study

Response: Archeologists for the Applicant have developed and are implementing a program to revisit cultural resources sites found on the Proposed Solar Two Project and to collect the supplemental information requested in this data request. The program to revisit the sites was developed in coordination with California Energy Commission (CEC) and Bureau of Land Management (BLM) staff. A field methodology (please see attachment CUL-1) was approved by both BLM and CEC and utilized during the resurvey efforts.

Archeologists for the Applicant began a 10-day rotation of fieldwork on June, 17, 2009 based on the approved methodology to revisit 302 sites. Forty six (46) sites were revisited, including 9 listed in Group III (Lange, 2009). At the completion of the June 2009 10-day rotation, the Applicant and agencies engaged in discussions refining approach to the requested resurveying and

other Data Requests. As a result of these discussions, it was decided that revisiting and collecting the supplemental information for a 25% sample of the sites representative of geomorphic landforms would be used to develop the Preliminary Staff Assessment/Draft Environmental Impact Statement (PSA/DEIS). CEC/BLM selected the 80 sites that would be included in the representative 25% sample and provided the list to the Applicant on August 27, 2009. In anticipation of receiving the list, archeologists for the Applicant had mobilized, and began resurveying, prior to receiving the list, enabling field work on the sites in the 25% sample list to commence immediately upon receipt of the list.

During the first week of September 2009, erosion and ponding from a large storm event changed the condition of many sites associated with the Cahuilla Lakeshore line, washes and ephemeral drainages. The changes observed were recorded and results are presented in the 25% sample. Field work for the 25% sample was completed on September 28, 2009. The data has been compiled and interpreted to develop the revised site descriptions requested in Data Request 143. Additionally, as a result of the information collected, a number of sites included in original survey report were combined. Please refer to attachment CUL-2 for a table showing the original 25% sample site list and information regarding which sites have been resurveyed, including which sites were combined.

Archeologists for the Applicant are in the process of revisiting and collecting the supplemental information requested for the remaining cultural resources sites located on the Proposed Solar Two Project and associated auxiliary features and buffers, including those in Group II (Lange, 2009). The information collected will be incorporated into a final Cultural Resources Technical Report to be completed near the end of December, 2009.

Form 8151-3

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FIELDWORK AUTHORIZATION

To Conduct Specific Cultural Resource Work Under the Authority of a Cultural Resources Use Permit Issued by the Bureau of Land Management Pursuant to Sec. 302(b) of P.L. 94-579, October 21, 1976, 43 U.S.C. 1732 and Sec. 4 of P.L. 96-95, October 31, 1979, 16 U.S.C. 470cc

INFORMATION REQUIREMENT APPROVED OMB NO. 1024-0037

FOR BLM USE ONLY

Request Number

CR CA-670-06-07FA10

Reviewed and Approved by:

1. State Permit Number and Date Issued	1a. Name of Permittee
CA-09-18 issued Apr. 15, 2009	Brian Hatoff, URS Corporation

2. Mailing Address

URS Corporation, Attn: Brian Hatoff, 1333 Broadway, Ste 800, Oakland, CA 94612

3a. Telephone Number	3b. Facsimile Number	3c. Email Address
510.874.3195	510.874.3268	brian_hatoff@urscorp.com

4. Nature of Cultural Resources Work (If Consultation Work, Identify Client and Project).

The proposed work will be the Continuation of Cultural Resources Inventory (Class III) and the addition of follow-up investigations, including Non-collection, identification of human remains through non-destructive field inspections for the Solar 2 Project within ~6,500 acres adjacent to Interstate 8 and west of El Centro, California. Tessera Solar/Stirling Energy Systems is the client.

Specifically, the proposed work will be a re-examination of the proposed Solar 2 project site for cultural resources located on BLM land.

The work involves re-recordation of newly found archaeological sites located on the property per direction from the Bureau of Land Management, El Centro office (Carrie Simmons) and the California Energy Commission (Mike McGuirt) – see Data Requests Set 2, Part 2, attached.

5. Location of Proposed Work (Include Map)

a. Description of Public Lands Involved	b. Identification of Cultural Resource(s) Involved (if applicable)
The APE includes the Solar 2 project area (~6,500 acres) adjacent to Interstate 8, west of El Centro, California within BLM and private lands, Imperial County, California. The permit area is a ~6,500-acre Area of Potential Effect (APE).	Survey will identify cultural resources within the APE and re-record resources as directed by the BLM and CEC.

6. Period During Which Work Will Be Conducted

From:	August 12, 2009	To:	December 31, 2009

7. Name of Individual(s) Responsible for Planning & Supervising Field Work & Approving Reports, Evaluations & Recommendations

Gary R. Fink, AICP, RPA; Rachael Nixon, MA, RPA

8. Signature of Applicant	9. Date
Rachael Nixon	8/12/09
10. Signature of BLM Authorizing Officer	**11. Date**
Vicki L. Wood	8/14/09

Attach Additional Sheets for Information as Necessary

Proposed Field Methodology
Solar 2 Cultural Resource Re-recordation Process
June 16, 2009

Based on direction from BLM and CEC, approximately 302 sites will be revisited using teams of 4 (field director and 3 archaeological technicians) During later stages as additional URS field directors become available, smaller crews will be formed for smaller sites. Each team will be assigned approximately 60 sites to revisit. Each crew will have a Trimble GPS-sub meter unit with project location data/site locations, polygons, a set of maps, geomorphological information, and DPR forms for the sites to revisit. Rachael Nixon will be the field PI and will be in the field every day to coordinate the work of the crews and to ensure consistency in the re-recordation effort. Gary Fink will be the overall project PI and will be in the field weekly to ensure that all work is carried out in a consistent manner

FIELD SURVEY

- Prior to fieldwork, previous information for each site will be reviewed.
- Verification will include close-quarter (3 meter transect intervals), resurvey and pin flag marking of artifacts, ecofacts, features, and architectural ruins, if any, including the re-demarcation of each site boundary and the boundary of each intrasite material culture concentration, as well as anthropogenic sediments.
- An artifact record will be completed for a sample of the temporally diagnostic and/or unique artifacts at a density of greater than 3 artifacts per meter squared. If density is less than 3 artifacts per meter squared, temporally diagnostic and/or unique artifacts will be point provenienced. Within each of the sites these artifacts will be pin flagged, labeled, mapped, described, and photographed
- Each site will be checked for intrasite boundary accuracy by checking the accuracy of the extant documentation on the types and frequencies of material culture across each site and in the intrasite material culture concentrations.
- DPR records will be written to include a material culture type that accurately describes the material cultural remains that are identified.
- Each site will be described using the accepted geomorphic terminology presented in the URS landform study previously reviewed and approved by the BLM and CEC. This information will be provided on the DPR form, in the narrative site description, and when possible delineated on the sketch map.
- Loci boundaries will be flagged, artifacts within each locus will be pin flagged, counted by material and type and photographed.
- Individual artifacts within the site boundary that are <u>not</u> temporally diagnostic or unique will be inventoried (but not individually mapped) by material and type to be included in the overall cultural constituent totals of the DPR 523 Series forms, and the differential frequency of such artifacts across each site will be documented through the use of sample frequency counts.
- Each site will be recorded with a minimum of four photographs (overview in all cardinal directions) Additional photographs will include photographs of selected artifacts and concentrations. Overview site photos will be of the site datum (central point) and UTM's included on the photograph record.
- All photographs will be recorded onto the team's photograph log with relevant data including temporary site designation, date, direction, recorder, and subject.
- Trail segments will be mapped with the sub-meter GPS, following the trail until terminated or it is no longer feasible to follow, measure, describe in notes, and photograph In situations where traces of trails are obliterated, such as in washes, the trails will be followed until soils stabilize and the trail is

no longer visible. If this means following trails on opposite sides of washes where they may again be visible, they will continue to be followed.

- Objects sites will be revisited to verify accuracy A new GPS point and 2-4 photographs will be taken.

- Previously unrecorded sites that LSA located as well as well as any additional sites that may be located during the re-recordation process will be documented per the procedures addressed above New DPR forms will be filled out for each resource so identified.

FIELD OFFICE

- URS will have a staff of 2-3 in a nearby hotel room specifically designated as an office space in the city of El Centro, CA.

- The office staff will begin working on processing/editing DPR records from the onset of fieldwork. URS office staff will be responsible for processing, backing up, and organization of incoming field data. This task includes the collection, charging, and backup of field data collection units (4-5 Trimble units and 4-5 digital cameras)

- GPS data will be downloaded and transmitted to San Diego GIS staff for post processing, *e.g.*, applying differential data correction and converting the data to ESRI/ArcGIS shapefiles.

- Processing of field site forms will occur within 1-2 days from time it is received, which will minimize post processing – this will include processing DPR forms, sketch maps, location maps and other related graphics

- Data quality will be checked daily by the field PI to ensure conformance with methodology, agency requirements and regulatory compliance. Once the data is completed in the field it will be electronically provided to the Principal PI for review and final reproduction

- GIS data will be organized to allow for submission to BLM according to recently adopted protocols using the BLM database for cultural resources.

Tentative Field Schedule

Field crews will be working 5:00 am to 1:30 pm (longer if weather permits).

Hotel office crew will work 5:30 am – 4:00 pm (if feasible)

Fieldwork schedule will be 10 days on with 4 days off (if feasible days off may be reduced to 2)

25% Site Sample			
Sites in 10/15 Submittal	**Sites on LSA 25% List**	**Other Sites Resurveyed**	**Notes**
DRK-002	DRK-002		
DRK-004	DRK-004		
DRK-005			Added by BLM to replace EBR-010
DRK-010			Added to replace site that became "not a site"
DRK-011	DRK-011		
DRK-020	DRK-020		
DRK-023	DRK-023		
DRK-027			Added to replace site that became "not a site"
DRK-029			Added to replace site that became "not a site"
DRK-032	DRK-032		
	DRK-045		Not a site
DRK-047	DRK-047		
DRK-139	DRK-139		
DRK-140	DRK-140		
DRK-141	DRK-141		
DRK-146			Added by BLM to replace LL-009
	EBR-001		Not a site
	EBR-005		Not a site
	EBR-010		Out of project area
EBR-010A	EBR-010A		
		EBR-018	Combined with EBR-019
EBR-019	EBR-019		
EBR-020	EBR-020		
EBR-023	EBR-023		
EBR-065	EBR-065		
EBR-070	EBR-070		
EBR-072	EBR-072		
EBR-079	EBR-079		
EBR-080	EBR-080		
EBR-083	EBR-083		
EBR-092	EBR-092		
EBR-095			Added to replace site that became "not a site"
EBR-096	EBR-096		
EBR-100	EBR-100		
EBR-102			Added to replace site that became "not a site"
EBR-106	EBR-106		
EBR-218	EBR-218		
EBR-222	EBR-222		
JF-005	JF-005		
JF-006	JF-006		
		JF-027	Combined with DRK-140
JF-030	JF-030		
JFB-004	JFB-004		
JFB-010	JFB-010		
JM-001	JM-001		
JM-005	JM-005		
JM-008	JM-008		
JM-009	JM-009		
JM-020	JM-020		
		JM-022	Combined with JM-026

25% Site Sample			
Sites in 10/15 Submittal	**Sites on LSA 25% List**	**Other Sites Resurveyed**	**Notes**
		JM-024	Combined with JM-026
		JM-025	Combined with JM-026
JM-026	JM-026		
JM-029	JM-029		
JM-030	JM-030		
JM-042	JM-042		
JMR-004	JMR-004		
JMR-008	JMR-008		
JMR-012	JMR-012		
	LL-009		Not a Site
LL-018	LL-018		
LL-019	LL-019		
		LL-021	Combined with EBR-019
	LL-022		Combined with EBR-019
RAN-005	RAN-005		
RAN-006	RAN-006		
RAN-008	RAN-008		
RAN-012	RAN-012		
RAN-015	RAN-015		
RAN-018	RAN-018		
	RAN-021		Combined with RAN-022
RAN-022	RAN-022		
			Combined with RAN-023
RAN-024	RAN-024		
RAN-025	RAN-025		
RAN-034H	RAN-034H		
	RAN-052		Combined with EBR-019
		RAN-056	Combined with RAN-057
RAN-057	RAN-057		
RAN-061	RAN-061		
		RAN-070	Combined with RAN-081
	RAN-072		Combined with RAN-081
		RAN-079	Combined with RAN-081
	RAN-080		Combined with RAN-081
RAN-081			
		RAN-082	Combined with RAN-081
RAN-412C	RAN-412C		
RAN-412F	RAN-412F		
RAN-419	RAN-419		
		RAN-421	Combined with RAN-412
RAN-424	RAN-424		
RAN-426	RAN-426		
RANA-003	RANA-003		
SM-003			Added to replace site that became "not a site"
T-03	T-03		
T-05			Added to replace trails out of project area
	T-09		4/2009: determined to be OHV and eliminated
	T-16		4/2009: determined to be OHV and eliminated
T-17			Added to replace trails out of project area
	T-27		4/2009: determined to be OHV and eliminated
	T-28		4/2009: determined to be OHV and eliminated
	T-35		4/2009: determined to be OHV and eliminated
T-42			Added to replace trails out of project area
T-52			Added to replace trails out of project area
77	**79**	**9**	**TOTALS**

TECHNICAL AREA: CULTURAL RESOURCES

Data Request 143: Please revise the April 2009 descriptions of the newly found archaeological sites in the proposed project area to more closely conform to the guidance of Data Requests 113 and 117, using the Template for Class III, Phase I Archaeological Site Descriptions of Attachment 1. Please note that it is critical to the interpretation and preliminary evaluation of the historic significance of site components to discuss potential cultural contexts for each site component. Such contexts make explicit the prehistoric or historic themes to which each component has the potential to relate. As one example, the discussions of archaeological site components that are historic refuse deposits adjacent to the historic San Diego and Arizona Railroad need to comment on the potential for such deposits to provide important data sets that may relate to aspects of the construction, operation, and maintenance of an early twentieth century railroad such as railroad construction technology, organization of railroad corporations, or labor relations.

Response: Please find revised site descriptions and overview location maps for the 25% sample re-survey as described in the response to Data Request 142, in the Applicant's Response to CEC and BLM Data Requests, Volume 2, filed under confidential cover.

TECHNICAL AREA: CULTURAL RESOURCES

Data Request 144: As a further aspect of the above revisions to the descriptions of the newly found archaeological sites in the proposed project area, please revise the descriptions of the sites in Group II from the recent field study (Lange 2009) to include all of the additional pertinent site information that the applicant appears to have in-hand.

Response: The requested site description revisions are addressed in the response to Data Request 143.

TECHNICAL AREA: CULTURAL RESOURCES

Data Request 145: Please complete the response to Data Request 118 by explicitly discussing the efficacy of modeling the potential archaeological character and distribution of unknown traditional use areas on the basis of available ethnographic information and theoretical principles of ethnogeography, and, if reasonably practicable, by developing such a model.

Response: For purposes of this model "traditional cultural uses" are defined as uses that have historical time depth of at least 50 years and that are important in maintaining the cultural integrity of the community. There is a reasonably good potential to generally model the archaeological character and distribution of unrecorded cultural features and other cultural materials associated with Native American traditional cultural uses in the vicinity of the Project. This potential is based on previous ethnographic and archaeological studies within the larger ethnographic region encompassing the Colorado Desert from the lower Colorado River corridor to the eastern slope of the Peninsular ranges. Although impacted by Spanish exploration and colonization of nearby regions between 1540 CE and the early 19th century, Native American lifeways remained relatively intact in the Colorado Desert through the mid-19th century (Forbes 1965; Forde 1931; Gifford 1931). Thus when systematic ethnographic recordation began in the late 19th and early 20th centuries traditional lifeways and cultural geography were within the living memory of Native American consultants. Moreover, Native American communities within this larger regional have maintained an unbroken oral tradition and close ties to the landscape, yielding good information about traditional cultural uses. The understanding of traditional cultural uses in this region are also furthered by the fact that pioneering cultural resources management projects began in the mid-1970s and early 1980s that included ethnographic interviews with individuals who have since passed on (Johnson 1985; von Werlhof 1987; Woods 1980; Woods et al. 1986). Finally, archaeologists in the region, beginning as early as the pioneering work of Malcolm Rogers in the 1930s, have consistently drawn on the strong ethnographic record in interpreting archaeological manifestations (Altschul and Ezzo 1994; Cleland 2004; Cleland and Apple 2003; Johnson 1985; Rogers 1936; von Werlhof 1987; Woods, et al 1986).

Several key points emerge from this body of work: (1) Native American consultants place a high value on the entire landscape and insist that ancestral remains and the natural landscape are interconnected in important ways; (2) the significance of these interconnections is such that damage to any part may result in damage to the whole; (3) within this complex cultural landscape there are specific areas that are particularly important; and (4) songs and oral traditions relate the creation and history of Native American groups as they lived, migrated and travelled across this landscape. Locations that contain human remains are of great concern. Very often key places on the landscape area associated with an abundance of specific archaeological manifestations, including geoglyphs, cleared circles, trails, ceramics scatters, and lithic scatters (Altschul and Ezzo 1994; Baksh 1997; Cachora 1994; Cleland 2004; Cleland and Apple 2003; Johnson 1985; von Werlhof 1987; Woods, et al. 1986). Human remains may be present at these locations as well. Features such as lithic scatters and ceramics scatters may be indicative not only of domestic habitation and subsistence practices but also certain ceremonial or religious activities.

In his pioneering ethnographic study of the Southwest Powerlink project that is adjacent to the present Project area, Woods (1980) identified the following types of traditional uses that can form the basis of a preliminary model for predicting archaeological correlates based on interviews with Kumeyaay and Quechan elders: (1) food resources; (2) habitation; (3) minerals and other natural resources; (4) religion and ritual, (5) trails; (6) and historical events (such as battles).

Food Resources – Potential food resources were distributed very unevenly across the desert landscape. In the Colorado Desert, ethnographic subsistence practices were tied particularly to plant resources and fishing; hunting played a relatively minor role. Locations of key plant and fish resources would be expected to have high frequencies of cultural materials related to food procurement. Key plant resource areas include the Colorado River corridor, the New and Alamo rivers, palm oases, dunal mesquite stands, desert wash/microphyll woodlands, and the eastern slope of the Peninsular ranges. Fish resources were found along the Colorado River, on the Lake Cahuilla shorelines (high and successional) and potentially along the New and Alamo rivers when these connected Lake Cahuilla with the Colorado River. Archaeological manifestations of food procurement and processing include ground stone artifacts, bedrock milling, fish traps, fish bone, rock rings, roasting pits and other burnt rock features.

Habitation – The distribution of habitation sites in the Colorado Desert region is driven both by practical considerations, such as food and water procurement, and ceremonial considerations, such as locations preferred for the Keruk ceremony, which sometimes entailed the gathering of fairly large social groups for multiple-day events and the establishment of residential area for these events (Forde 1931; Forbes 1965). With regard to practical considerations, habitation sites are reported archaeologically and ethnographically in locations favored for food procurement as noted above and at springs. Locations of habitation associated with ceremonial activities are more difficult to model on the basis of environmental factors, but can be modeled based on ethnographically identified areas of high ceremonial importance. Some habitation-related cultural manifestations would be predicted at such locations. Archaeological materials associated with habitation functions include ceramics scatters, ground stone tools, flaked stone tools, lithic scatters, possible midden formation, rock rings, hearths and roasting pits, and cleared circles. Cleared circles often occur without habitation debris, however, and may not always be indicative of domestic-type of habitation.

Minerals and Other Natural Resources – Known mineral resources include desert pavements with knappable, metavolcanic, toolstone, Obsidian Butte, and major ground-stone quarries (Schneider 1993). Desert pavement sources are usually identified archaeologically as geological maps are not sufficiently detailed to be strong predictive use. It is noteworthy, though, that flaked stone procurement sites are often found along major trails. Archaeological correlates of desert pavement sources are flaking stations and generalized flaked stone scatters. Ground stone quarries are identified by the presence of extremely large flakes, cores, and abandoned performs (Scheider 1993). Modeling non-mineral resources is beyond the scope of the present effort.

Religion and Ritual - Ethnographic information is required for the identification of sites favored for ceremonial and ritual activities. By nature such locations tend to defy environmentally-grounded predictive models. It has been noted that sites favored for rituals associated with the treatment of the dead in the region are

often to the west of major habitation areas (Johnson 1985), and this observation does have some predictive merit. Similarly, mountains often have special cultural significance; yet in the absence of ethnographic testimony, it is difficult to predict which mountains, passes, and basins would have been chosen and have significance. Archaeological correlates of ritual activities include rock art, geoglyphs, rock alignments, rock cairns, small rock rings, small cleared circles, cremated human bone, concentrations of ceramic scatters (indicative of ceremonial offerings), and concentrations of simple flaking stations may sometimes also be indicative of ceremonial offerings, and trails (see below).

Trails – Long-distance travel was a key aspect of the cultural adaptation to the Colorado Desert environment. Travel was associated with seasonal movement, social visitation, religious pilgrimage, warfare, and trade. Trails were constructed in region to facilitate such travel and they connect major habitation areas and also major locations of ceremonial significance. Contemporary Native Americans continue to use trails for purposes of remembering and honoring their cultural heritage. In the western Colorado Desert most known trails connect the desert interior and Lake Cahuilla shoreline with either the Peninsular Range to the west or the Colorado River corridor to the east. Along the river corridor itself, north-south trails are common. Trails are often associated with lithic scatters, ceramics scatters, cairns, cleared circles and other cultural features, but they can also be devoid of any associated materials for considerable distances. Animal trails are occasionally mistaken for cultural trails, and sometimes the two may be difficult to distinguish. Clearly cultural trails are found on stable geological surfaces such as well-developed desert pavements, but more recent, less developed pavements may also preserve cultural trails.

Historical Events (such as battles) – Kumeyaay and Quechan oral history record the locations of specific historical events. For example, Woods (1980) recorded the location of a military confrontation between these tribes not far from the Project area. These events are generally episodic and unique and do not lend themselves to archaeological predictive modeling. Ethnographic evidence is necessary in identifying such locations and in determining what archaeological correlates may remain there.

Based on this preliminary model the following observations can be made about the Project area. Food resource procurement and habitation sites would be predicted to be associated with the Lake Cahuilla shoreline, but the remainder of the Project area has a relatively low potential. Mineral resources might include simple flaked stone procurement of desert pavements. Trails might be encountered on stable surfaces, especially on terraces that facilitate east-west travel. Additional ethnographic testimony would be necessary to determine unknown locations of religious significance.

Based on this assessment, it is not likely that a more detailed model could be developed to effectively predict the potential archaeological character and distribution of unknown traditional use areas. As discussed in the responses to Data Requests 149 and 150, the proposed Lake Cahuilla High Water Mark Archaeological District and the known trails leading to and from this area would be the area most likely to contain unknown traditional use areas.

REFERENCES CITED

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TECHNICAL AREA: CULTURAL RESOURCES

Data Request 146: Please complete the response to Data Request 119 by explicitly discussing whether and where there may be landforms in sight of the project area on which other unknown traditional use areas may be present. The content of the discussion that will complete the response to Data Request 118 should inform the further response to Data Request 119.

Response: The response to Data Request 119 identifies locations that qualify as areas of traditional use as discussed in the preliminary traditional use model discussion presented above. The Proposed Project would either be visible from them or would be a visible intrusion during ingress and egress to these sites, which would also be of concern from a traditional-use perspective. As noted, Native Americans in the Project vicinity place traditional value on all the sites associated with their cultural heritage, and this value qualifies as traditional use. That does not mean that all traditional use sites are of equal importance. Ethnographic interviews would the practicable and reasonable way to evaluate significance. Additionally, Woods (1980) documented two sites of religious significance several miles from the Project area, but within the potential viewshed. One is a mountain to the west of the Project, and the other is a complex of natural and cultural features to the southwest of the Project area. The mountain to the west is in the Coyote Mountains and the complex of natural and cultural features (including the battle site) are located to the southwest of the Project site at the foot of In-ko-pah gorge. In addition, Woods (1980) identified a Native American habitation area at Coyote Wells, also to the southwest of the Project site.

TECHNICAL AREA: CULTURAL RESOURCES

Data Request 147: Please revise, in the text of the *Methods* section and in table 5-4 of the *Report of Findings* section of the April 2009 revision of the Technical Report, the cultural resources taxonomy to more objectively reflect the character of the archaeological deposits in the project area of analysis, and further divide each type into preliminary chronological groups. Staff recommends dropping the open camp resource type in favor of multiple individual types that more precisely articulate the archaeology of the resources. As examples, surface deposits of chipped stone and ground stone artifacts and ceramic sherds would type out, simple enough, as a "chipped and ground stone artifact and ceramic scatter." A deposit that includes one or more intact hearths and ceramic sherds would type out as "fire feature and ceramic scatter." The interpretation of the individual archaeological site types as resource procurement areas, resource processing areas, temporary camps, base camps, and so on would perhaps occur in the *Discussions and Interpretations* section of the Technical Report. Such interpretation is a necessary element of the evaluation of the historical significance of each resource and a necessary precursor to the appropriate disposition of the cultural resources inventory.

Response: The various resource types have been re-defined from the April 2009 version of the Cultural Resources Technical Report, as outlined below, to provide more objective descriptions of the resources located on the Solar Two Project site. Some previous definitions, such as the use of the term “open camp” and “other sites” have been replaced in favor of more objective terms that characterize the deposits and do not postulate uses of the cultural remains that were identified. Additional terms have been added and are included in the list below.

In consideration of an objective cultural resources taxonomy, all cultural resources recorded in the Project area have been assigned to the following site type categories:

Isolated Find: An isolated find is defined as two or fewer artifacts. Artifacts may conform to any of the site type categories listed below and can be either whole or fractured into several fragments; some isolated finds may be able to be re-fitted together.

Lithic Scatter: This site type includes all sites containing chipped stones, including lithic debitage, cores, and flaked tools. Lithic scatters contain only lithics; no other types of artifacts are present.

Ceramic Scatter: Ceramic scatters are sites that contain objects made of clay which are fired and hardened to form utilitarian vessels or objects for use by prehistoric cultures that are usually found as fragments at archaeological sites. Ceramic scatters contain only ceramics with no other types of artifacts present.

Ground Stone: This site type includes milling-related artifacts, such as manos (hand grinding stones), metates (portable or bedrock milling features), and pestles used for pounding, whether found in association with other artifacts or not.

Fire-Affected Rocks and/or Hearths: These are typically rocks that have been affected by intense heat that display charring, cracking, and/or fire/smoke blackening. They can also be stones from a hearth that are simply blackened.

Unique artifacts: Unique artifacts are items that are not commonly found at archaeological sites, such as quartz crystals, beads made of shell or other materials, pendants, rock art, or similar artifacts or features that are rare in archaeological assemblages.

Cremation: This site type contains a concentration(s) of burned human bone fragments, often in association with burned and unburned ceramics, debitage, flaked stone tools, groundstone, and/or unique artifacts.

Animal Bone: These consist of burned or unburned non-human bone fragments often found in association with burned or unburned ceramics, features, debitage, flaked stone tools, groundstone, and/or unique artifacts.

Trails: Trails are 35- to 50-cm-wide footpaths that appear tamped or pushed (constructed) into surrounding soils. This site type may or may not be associated with other archaeological remains.

Geoglyphs: A geoglyph is a site containing a design, pattern, and/or shape purposely created on the surface through the action of clearing rocks on the surface to expose the ground surface, often identified in areas of stabilized desert pavement. Geoglyphs may or may not be associated with other archaeological features.

Rock Cluster Features: These are features that may occur as isolated finds or associated with prehistoric or historic archaeological sites. These features consist of stones that have been piled up and stand out from other surface. Such features can be a single course of rocks, or rocks higher than one course high. These features may represent prehistoric activity, or may be associated with mining claims and homesteading land claims. These types of rock clusters are also commonly used by off-highway vehicle (OHV) users to demarcate OHV tracks, trails, and racecourse.

Historic Refuse: A deposit and/or sparse distribution of domestic, commercial, or industrial debris (cans, bottles, machinery, and appliances) that dates before 1960.

Historic Structure: Any structure constructed before 1960 including but is not limited to residential buildings, commercial buildings and ancillary structures.

Historic survey/mapping features: These are built/constructed features that may be isolated and/or associated with other site types listed. An example of such features includes United States Government Land Office benchmarks, aerial photograph markers, and concrete foundations.

Historic Linear Site: These sites can include but are not limited to a road, an irrigation canal, railroad, transmission line, or any other built linear resource that was constructed before 1960 and may or may not be associated with other historic elements.

Military Site: These sites can include but are not limited to historic era artifacts associated with military training activities, ruins of structures, and/or cleared ground surface features (tent clearings) prior to 1960.

Historic Mining Site: These sites may include but are not limited to barrow pits, surface mining features, access roads, mining related equipment, structural ruins and associated mining related artifacts.

Note that sites and/or concentrations within sites may contain multiple types listed above, each of which may conform to any of these site types (excluding isolated finds). Such sites and/or concentrations within sites are referred to as multi-use and/or multiple activity areas.

The second part of this Data Request is to divide each identified site type into preliminary chronological groups. Table 5-4 of the April 2009 *Cultural Resources Technical Report* has been modified in response to this Data Request and is included as attachment CUL-3 of this submittal for the sites in the 25% sample of sites that were re-surveyed (see response to Data Request 142).

It is important to note that placement of sites into chronological groups is difficult unless diagnostic artifacts are identified which can then provide insights into the regional cultural chronology, thereby allowing individual sites to be placed into chronological groups. Archaeological artifacts that are chronological indicators include the presence of pottery, obsidian, or features that can be radiocarbon dated or correlated to a general period of time, which can provide a range of dates for a particular resource. Historic sites may also contain diagnostic artifacts, such as glassware, ceramics, tin cans, etc., for which date ranges can also be obtained. This is explained more fully in Data Response 148 below.

The vast majority of the resources identified on the Solar Two Project site are temporally non-diagnostic lithic scatters. Lithic scatters sites can range in chronological age from the early period cultures (Paleoindian Period, circa 12,000 to 9,000 years before the present [ybp]) all the way to modern times because there are no diagnostic artifacts present at the majority of lithic scatter sites. Therefore, only those sites with temporally diagnostic artifacts or features are able to be placed into chronological groups with any degree of reliability.

Table 5-4, *Newly Recorded Cultural Resources Summary Table* has been modified to include the information requested. Changes to Table 5-4 include: revision of descriptions in the Site Type column to more objectively identify the resources present; modification of the terms per the CEC-provided template; addition of a new column that categorizes each site type into a chronological subgroup where diagnostic artifacts are present; and, deletion of the interpretation column in this section.

Interpretation of the resources is included in the site descriptions provided in response to Date Request 143 and will be included Section 6 of the revised report.

Revised Table 5-4
Solar Two Newly Recorded Cultural Resources Summary Table
Resurveyed Sites - 25% Sample

Temporary Site #	Site Type	Cultural Context	Preliminary Chronological Group	Preliminary Eligibility Assessments	District	Potential for Buried Deposits Based on Geomorphologic Information
DRK-002	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
DRK-004	Lithic Scatter Historic Survey Marker	Prehistoric Historic	Non-Diagnostic Early 1900's	Not Eligible	None	Low
DRK-005	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
DRK-010	Lithic Scatter Historic Survey Marker Historic Refuse	Prehistoric Historic	Non-Diagnostic Early 1900's	Not Eligible	None	Low
DRK-011	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
DRK-020	Historic Survey Marker Historic Bullet	Historic	1912 1911 - Present	Not Eligible	None	Low
DRK-023	Lithic Scatter Rock Cluster	Prehistoric Historic / Modern	Non-Diagnostic	Not Eligible	None	Low
DRK-027	Lithic Scatter Groundstone Rock Cluster	Prehistoric	Late Prehistoric	Not Eligible	None	Low
DRK-029	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
DRK-032	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
DRK-047	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
DRK-139	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium to High
DRK-140	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium to High
DRK-141	Lithic Scatter Fire-Affected Rock / Hearth	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium to High
DRK-146	Historic Refuse	Historic	1945 - Present	Not Eligible	None	Medium to High
EBR-010A	Ceramic Scatter	Prehistoric	Late Prehistoric	Need Data	Unknown	Low
EBR-019	Lithic Scatter Ceramic Scatter Fire-Affected Rock / Hearths Cremation Animal Bone Groundstone Unique Artifacts Geoglyhs	Prehistoric	Late Prehistoric	Eligible	Cahuilla	Medium to High
EBR-020	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low

Revised Table 5-4
Solar Two Newly Recorded Cultural Resources Summary Table
Resurveyed Sites - 25% Sample

Temporary Site #	Site Type	Cultural Context	Preliminary Chronological Group	Preliminary Eligibility Assessments	District	Potential for Buried Deposits Based on Geomorphologic Information
EBR-023	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
EBR-065	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
EBR-070	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
EBR-072	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
EBR-079	Lithic Scatter Rock Cluster	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
EBR-080	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
EBR-083	Rock Cluster	Historic / Modern	Non-Diagnostic	Not Eligible	None	Low
EBR-092	Historic Refuse Rock Cluster	Historic	Late 19th century to early 20th century up to the 1950's	Not Eligible	None	Low
EBR-095	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
EBR-096	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
EBR-100	Lithic Scatter Trail (T-03)	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium
EBR-102	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium
EBR-106	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium
EBR-218	Lithic Scatter Ceramic Scatter Groundstone	Prehistoric	Late Prehistoric	Need Data	Cahuilla	Medium to High
EBR-222	Lithic Scatter Ceramic Scatter	Prehistoric	Late Prehistoric	Need Data	Unknown	Medium
JF-005	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
JF-006	Historic Refuse Rock Cluster	Historic	1935 -1952	Not Eligible	None	Low
JF-030	Historic Refuse	Historic	1945-1970's	Not Eligible	None	Medium to High
JFB-004	Historic Survey Marker	Historic	Early 1900's	Not Eligible	None	Low
JFB-010	Historic Survey Marker	Historic	Early 1900's	Not Eligible	None	Low
JM-001	Lithic Scatter Ceramic Scatter	Prehistoric	Late Prehistoric	Need Data	Unknown	Medium
JM-005	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium
JM-008	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium
JM-009	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium
JM-020	Lithic Scatter Historic Refuse	Prehistoric Historic	Non-Diagnostic Post 1930's	Not Eligible	None	Medium

Revised Table 5-4
Solar Two Newly Recorded Cultural Resources Summary Table
Resurveyed Sites - 25% Sample

Temporary Site #	Site Type	Cultural Context	Preliminary Chronological Group	Preliminary Eligibility Assessments	District	Potential for Buried Deposits Based on Geomorphologic Information
JM-026	Lithic Scatter Fire-Affected Rock / Hearth Historic Refuse	Prehistoric Historic	Non-Diagnostic Late 1950's	Not Eligible	None	Medium
JM-029	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
JM-030	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
JM-042	Lithic Scatter Trail (T-52)	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium
JMR-004	Fire-Affected Rock / Hearth One Lithic Core	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
JMR-008	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
JMR-012	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
LL-018	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium
LL-019	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
RAN-005	Historic Survey Marker	Historic	Early 1900's	Not Eligible	None	Low
RAN-006	Historic Refuse	Historic	1940s – 1950's	Not Eligible	None	Low
RAN-008	Historic Survey Marker	Historic	Early 1900's	Not Eligible	None	Low
RAN-012	Lithic and Ceramic Scatter Rock Clusters	Prehistoric	Late Prehistoric	Need Data	Unknown	Low
RAN-015	Historic Refuse	Historic	After 1940	Not Eligible	None	Low
RAN-018	Aerial Photo Marker	Historic	Non-Diagnostic	Not Eligible	None	Medium to High
RAN-022	Lithic Scatter Historic Refuse Gravel Mining	Prehistoric Historic	Non-Diagnostic 1900's – 1950's	Not Eligible	None	Low
RAN-024	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
RAN-025	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
RAN-034	Historic Refuse Lithic Scatter	Historic	Non-Diagnostic	Not Eligible	None	Low
RAN-057	Lithic and Ceramic Scatter	Prehistoric	Late Prehistoric	Need Data	Unknown	Medium
RAN-061	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
RAN-081	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low

Revised Table 5-4
Solar Two Newly Recorded Cultural Resources Summary Table
Resurveyed Sites - 25% Sample

Temporary Site #	Site Type	Cultural Context	Preliminary Chronological Group	Preliminary Eligibility Assessments	District	Potential for Buried Deposits Based on Geomorphologic Information
RAN-412C	Lithic Scatter Ceramic Scatter Fire-Affected Rock / Hearth Animal Bone	Prehistoric	Late Prehistoric	Need Data	Unknown	Medium to High
RAN-412F	Lithic and Ceramic Scatter Groundstone	Prehistoric	Late Prehistoric	Need Data	Unknown	Medium to High
RAN-419	Lithic Scatter Fire-Affected Rock	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium to High
RAN-424	Lithic and Ceramic Scatter Fire-Affected Rock / Hearth Groundstone	Prehistoric	Late Prehistoric	Need Data	Cahuilla	Medium
RAN-426	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Medium
RANA-003	Historic Bomb Crater	Historic	Non-Diagnostic	Not Eligible	None	Low
SM-003	Lithic Scatter	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
T-03	Prehistoric Trail Lithic Scatter (EBR-100)	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
T-05	Historic Trail	Historic	Non-Diagnostic	Not Eligible	None	Low
T-17	Prehistoric Trail	Prehistoric	Non-Diagnostic	Not Eligible	None	Low
T-42	Prehistoric Trail	Prehistoric	Non-Diagnostic	Eligible	None	Low
T-52	Prehistoric Trail Lithic Scatter (JM-042)	Prehistoric	Non-Diagnostic	Not Eligible	None	Low

TECHNICAL AREA: CULTURAL RESOURCES

Data Request 148: Please revise the preliminary chronological grouping of the prehistoric and historical archaeological deposits to draw on the available sources of chronological data. For prehistoric archaeological sites, the preliminary chronological groups ought to reflect the cultural chronology of the *Setting* section of the April 2009 revision to the Technical Report and be made, where feasible, relative to sources of relative chronological data such as the most recent projectile point, ceramic, and "unique artifact" typologies. For historical archaeological sites, the preliminary chronological groups similarly ought to be made relative to the most recent ceramic, bottle and bottle glass, and tin can typologies, and, where applicable, the typologies for less frequent artifact classes such as nails, ammunition, and buttons, and reflect, at a minimum, the broad historic periods set out in the *Settings* section, if not narrower time ranges within those periods.

Response: Placement of cultural resource sites into chronological groups on the basis of general artifact assemblages is difficult unless diagnostic artifacts are located and identified at a particular cultural resource locale, as stated in Data Request 147 above. Diagnostic artifacts are items that can provide a broad range of dates for an archaeological or historical deposit based on previously known information, primarily the known cultural chronology for the region as pieced together by previous researchers. The cultural chronology of the Colorado Desert and southern California as a whole is summarized below, and is followed by an overview of diagnostic characteristics or features of each culture group:

<u>Paleoindian Period, (ca.10,000 to 6,000 BC)</u>

This period is characterized by a flaked stone industry. This period is typically defined as sites containing fluted points (Clovis and Folsom). These projectile point types are large, skillfully worked, and fluted. Such points would have been hafted to a spear and launched with an Atlatl. Although Clovis and Folsom have not been reported in the Colorado Desert, early accounts of proposed Paleoindian sites in the Colorado Desert are reported to include; large stemmed projectile points, heavy unifacial scraping tools, burins, awls, and crescent shaped artifacts (Rogers 1939). Milling implements are conspicuously absent from these sites. Evidence of the Paleoindian Period in this portion of the Colorado Desert is generally scarce (Schaeffer and Laylander 2007).

<u>Archaic Period, (6,000 BC to AD 500)</u>

Characteristics of the Archaic period include a variety of large spear and dart points including Pinto-period (eared), Gypsum (stemmed) and Elko (corner-notched) projectile points. Other items characteristic of the Archaic period include an array of basketry, nets, traps, split-twig figurines, cottonwood mortars, and other perishables (Chartkoff and Chartkoff 1984, Love and Dahdul 2002). This period is also marked by an increase in groundstone tools such as, manos, metates, mortars, and pestles.

A shift in technology from reliance on hunting to a combination of hunting and gathering is evident in these sites. However, sites representing this time period are also scarce in the Colorado Desert (Schaeffer and Laylander 2007).

Late Prehistoric Period, (AD 500 - Contact)

Characteristic artifacts of the time period include Desert Side-notched and Cottonwood triangular series projectile points; Tizon Brownware and Lower Colorado Buffware; and an increase in groundstone implements, incised stone, shell beads and pendants. In addition, behavioral changes also mark this transition period such as the practice cremating the deceased rather than inhumation burial practices (Schaeffer and Laylander 2007, Herbst et. al. ND, Warren and Crabtree 1986). Due to the fluctuations of the ancient Lake Cahuilla during this time, abundant evidence of sites representative of this culture is found throughout the Colorado Desert. Prehistoric people were drawn to this area to exploit lacustrine resources. Some Late Prehistoric people likely practiced incipient horticulture in the summer months when rainfall in the form of flash floods became available (Barker 1976).

Historic Period

There are three generally recognized divisions of the historic period: Spanish Period (1540 to 1821); Mexican Period (1821 to 1848); and the American Period (1848-present). Characteristics of each are summarized in more detail in the April 2009 revision of the Cultural Resources Technical Report (Report). A summary of the specific development of the Imperial Valley region is also included in the Report. Temporally diagnostic artifacts are used to identify historic era sites and can include bottles, jars, ceramics, cans, nails, and other miscellaneous items with datable characteristics.

Certain items found in the archaeological record are diagnostic, or characteristic of a time period, and are represented by artifacts in the material culture record. Ceramics, for example, can provide a range of dates for a site because it is known when ceramics were introduced into the southern California region. Ceramics occurred during the Late Prehistoric Period in this region and not during earlier periods, so it is safe to postulate that a site containing ceramics originates from Late Prehistoric Period or later.

Additional diagnostic archaeological artifacts that can assist in the identification of site chronology include, but are not limited to, the occurrence of certain style projectile point types, such as Pinto Points, or small Desert Side-notched and Cottonwood Series Points. Pinto Points are indicative of the Archaic Period, while Desert side-notched and Cottonwood Points are indicative of the Late Prehistoric Period. Another example of a temporally diagnostic artifact is the presence of obsidian, which is indicative of the Late Prehistoric Period. Extra-regional materials wonderstone, shell, and Obsidian Butte, located south of ancient Lake Cahuilla, was exposed during that time and lithic material for production of tools was readily available to the people of the area.

Wonderstone, groundstone, and milling stones can represent either the Archaic or Late Prehistoric Periods, depending on the cultural context in which they are found, that is, whether they are associated with other culturally diagnostic artifacts. Certain features, such as hearths that contain charcoal, can be radiocarbon dated or correlated to a general range of time. These diagnostic artifacts or features can then provide a range of dates for a particular resource.

Historic sites may also contain diagnostic artifacts, such as glassware, ceramics, tin cans, etc., which often contain maker's marks for which date ranges of manufacture can also be determined. Diagnostic artifacts, if identified, can provide valuable insights into the regional cultural chronology, thereby allowing individual sites to be placed into chronological groups.

The vast majority of the prehistoric resources identified on the Solar Two Project site are temporally non-diagnostic lithic scatters, which can range in chronological age from the early period cultures described above (the Paleoindian period) all the way to the Late Prehistoric Period, to modern times. Lithic scatters generally do not contain diagnostic artifacts because general lithic technology employed, that of chipping core materials to make useable stone tools, was practiced during the entire prehistoric period. General lithic technology is similar in nature over time and generally is not distinguishable from one time period to the next. Certain specialized tools, such as Lake Mojave, Pinto, Gypsum, and other projectile points, for example, as mentioned above, are known to correlate with specific prehistoric time periods due to the presence of other datable materials, but the flaked stone technology associated with other lithics is most often indistinguishable. Therefore, only those sites with temporally diagnostic artifacts or features are able to be placed into chronological groups with any degree of reliability.

Prehistoric sites with temporally diagnostic characteristics include items such as carbon, ceramics, cremation, shell beads and pendants, Desert Side-notched and Cottonwood Series projectile points, and groundstone.

Table 5-4, cited in Data Response 147 above, assigns chronological time periods to each of the sites where diagnostic materials were available.

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TECHNICAL AREA: CULTURAL RESOURCES

Data Request 149: The three criteria which the applicant proposes to use for the assessment of prehistoric archaeological sites in the project area of analysis as contributing elements of the Lake Cahuilla High Water Mark Archaeological District do not clearly correspond to or set out concepts of the boundary, the historic theme or themes, or the period of significance for the new district. Please draft a preliminary evaluation of the potential historic significance of the new district that follows the guidance of National Register Bulletin 36 *(Guidelines for Evaluating and Registering Archeological Properties,* 2000), and, at a minimum, includes a discussion and rationale for the preliminary boundary of the district, the historic themes or contexts that unify district archaeological sites, and a discussion and rationale for the preliminary period of significance for the district.

Response: An archaeological district is comprised of a grouping of sites that possess a significant concentration and continuity, and that are linked historically by function, themes, physical development, or aesthetically by plan (Little et al. 2000:44). The following provides a preliminary evaluation of the potential historic significance of the proposed Lake Cahuilla High Water Mark Archaeological District.

Although there is no established outline for presenting the significance information, a statement of significance should describe the historic context used to evaluate the district (Little et al. 2000:49). In evaluating properties as district for the National Register of Historic Places there are several factors that are to be addressed. These include the category of the properties, the context of the properties, applicable National Register criteria, and whether the properties and the district have integrity (Little et al. 2000:20).

A preliminary assessment of the Lake Cahuilla High Water Mark Archaeological District indicates that the district can be categorized as having a domestic and subsistence function. This is supported by evidence of habitation and food processing. The broadest context for the district is prehistoric hunter-gather behavior. Within this, the more focused context is prehistoric hunter-gather activity in arid and lucustrine environments. The current significance assessment of the district is linked to Criterion D, its potential to yield information important in prehistory. This assessment is supported by surface observations for the range and variety of information preserved at the sites, along with the potential for intact subsurface deposits. Conditions in this portion of the desert are harsh. It is likely that wind and water have shaped, eroded, and buried materials within the district and modern human activity is evident in the area as indicated by vehicle tracks. However, overall the sites and the district retain sufficient integrity to convey in location, design, setting, materials, workmanship, feeling and association to qualify as a significant property.

All of the sites within the Lake Cahuilla High Water Mark Archaeological District are prehistoric archaeological resources reflecting subsistence activities focused on lacustrine resources. Potential information content based on surface indications includes lithic technology, chronology, subsistence practices, and settlement patterns. Location and setting are of particular importance in defining the District. The District is a relatively narrow band along the high water mark at

approximately the 12-meter elevation (40 -foot contour) along former Lake Cahuilla.

Properties within a district are typically contiguous. If sites are directly related through cultural affiliation, related elements of a pattern of land use, or historical development, but are not contiguous and the space between sites is not significant, then the grouping of sites can be described as a discontiguous district (Little et al. 2000:43). Based on this guidance, the Lake Cahuilla High Water Mark Archaeological District is proposed as a discontiguous based on the sites being related through function and setting, and most likely cultural affiliation.

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TECHNICAL AREA: CULTURAL RESOURCES

Data Request 150: On the basis of the above preliminary evaluation, please revise the criteria for assessing district contributors to more clearly correspond to the preliminary district boundary, the historic themes or contexts for which the district is thought to be historically significant, and the preliminary period of significance for the district. In addition, please make sure that the criteria also include a criterion that addresses a minimum standard of depositional integrity for district contributors.

Response: There are three criteria for a prehistoric site to be included as a contributing element in the Lake Cahuilla High Water Mark Archaeological District: 1) location along the 12-meter (40-foot) AMSL high shoreline of former Lake Cahuilla; 2) potential to contain well preserved cultural deposits and/or features; and 3) an assemblage with a range of artifacts.

Archaeological sites comprising the district are those located along the 12-meter high water mark. For purposes of defining the district, the shoreline shown on Figure 2-1 *Geomorphic Landforms and Geology*, (provided as attachment CUL-4 to this submittal) graphically indicates the location of the high water mark. Based on soil conditions, erosion and other natural factors, the area labeled as beach zone on Figure 2-1 is interpreted as the area encompassing the high water mark. Sites within the Lake Cahuilla High Water Mark Archaeological District are located within one-half mile of the beach zone and at an elevation greater than 12 meters.

The current assessments of the potential for preservation of cultural material at sites in the district are based on surface observations. Evidence from the geomorphic investigation regarding age of landforms and depositional environment, along with observations of the archaeological field team provide the basis for assessing the potential for subsurface preservation. The geomorphic analysis identified the Beach Zone area where the district is located as having moderate sensitivity for subsurface deposits. Sites included in the district possess at least a moderate potential for intact buried cultural material.

Sites in the Lake Cahuilla High Water Mark Archaeological District also possess a variety of cultural material. Although no rigid categories of required artifacts are proposed, typically assemblages at sites within the district contain various combinations of the following: flaked lithics, stone tools, cremations, faunal material, groundstone, fire affected rock, or ceramics.

Period of significance is based on the geomorphic history of the region that includes the presence of a lake during much of the Holocene period (Li et al. 2008b). Precise dating for stands of the high water mark is a goal of regional research efforts in the Salton Basin. It has been posited that the lake maximum elevation of 12 meters was relatively stable for an extended period, as evidenced by the high water marks left in the basin, although several desiccations or near desiccations appear to have occurred (see Wilke 1978). When water entered the Salton Basin after an elevation of more than 12 meters, any water exceeding the amount subject to evaporation would have flowed to the lower delta of the Colorado River in Baja California with the outflow channel located near Cerro Prieto (Laylander 1994), thus effectively stabilizing the high lake level.

The primary theme of the Lake Cahuilla High Water Mark Archaeological District is prehistoric behavioral patterns associated with exploitation of lacustrine resources in an arid environment. This broad concept can be further defined by regional research issues such as lithic technology, settlement, and subsistence as discussed in Section 3 of the Cultural Resources Technical Report. Although environmental conditions favor preservation of evidence of cultural activity from the final high stand of Lake Cahuilla, the potential exists for the presence of sites with time depth.

Properties within a district are typically contiguous. If sites are directly related through cultural affiliation, related elements of a pattern of land use, or historical development, but are not contiguous and the space between sites is not significant, then the grouping of sites can be described as a discontiguous district (Little et al. 2000:43). Given this guidance, the Lake Cahuilla High Water Mark Archaeological District is proposed as a discontiguous based on the sites being related through function and setting, and most likely cultural affiliation.

Occurrences of cultural material on lower elevation geomorphic surfaces, provides indirect relative dating. That is, sites lower in elevation that the 12-meter (40-foot) shoreline reflect behaviors of later populations as they followed the receding water and resources from the high water mark to lower and lower elevations as the lacustrine resource base shrank (Apple et al. 1997; Schaefer 1986). These recessional sites relate to changing patterns of hunter-gather adaption that post date the last high lake stand, and therefore are not part of the Lake Cahuilla High Water Mark Archaeological District. Application of the criteria discussed above has resulted in a reconfiguration of the proposed district boundaries and a reduction in the number of sites included in the Lake Cahuilla High Water Mark Archaeological District.

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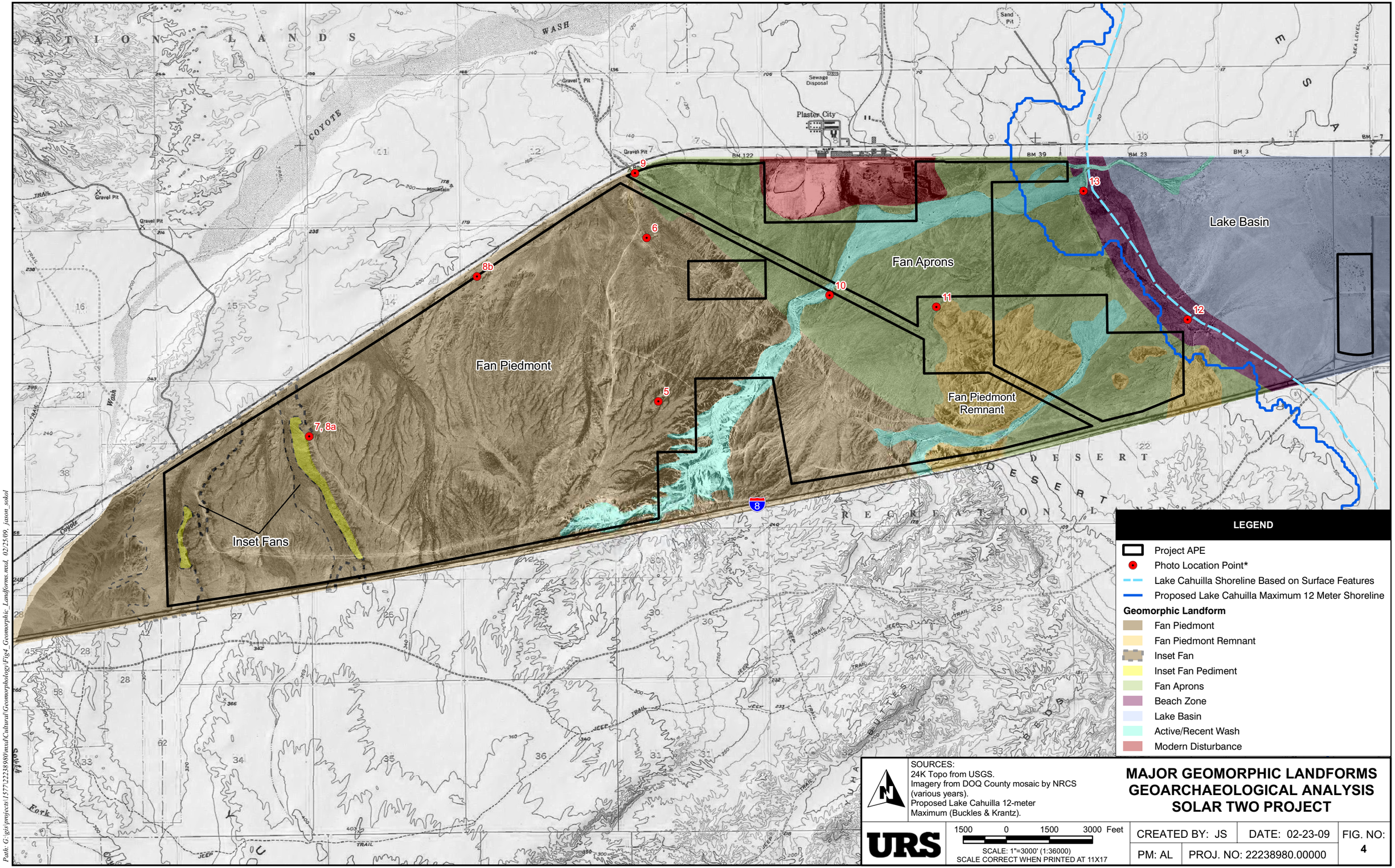

SOURCES:
24K Topo from USGS.
Imagery from DOQ County mosaic by NRCS (various years).
Proposed Lake Cahuilla 12-meter Maximum (Buckles & Krantz).

MAJOR GEOMORPHIC LANDFORMS GEOARCHAEOLOGICAL ANALYSIS SOLAR TWO PROJECT

URS

1500 0 1500 3000 Feet

SCALE: 1"=3000' (1:36000)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: JS	DATE: 02-23-09	FIG. NO: 4
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** Numbers shown next to photo location point represent the figure number the photo will be shown on in the report.*

Path: G:\gis\projects\1577\22238980\mxd\Cultural\Geomorphology\Fig4_Geomorphic_Landforms.mxd, 02/25/09, jason_sokol

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

Docket No. 08-AFC-5

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(Revised 8/17/09)

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DECLARATION OF SERVICE

I, Angela Leiba, declare that on October 15, 2009, I served and filed copies of the attached, Applicant's Responses to Data Requests 142-150. 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: **[http://www.energy.ca.gov/sitingcases/solartwo/index.html].**

The documents have 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;

__X__ 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
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1516 Ninth Street, MS-4
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I declare under penalty of perjury that the foregoing is true and correct.

Original Signed By

Angela Leiba

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