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January 6, 2012

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Mike Monasmith
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1516 Ninth Street, MS-15
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Subject: Data Response, Set 1D
Hidden Hills Solar Electric Generating System (11-AFC-2)

Dear Mr. Monasmith:

On behalf of Hidden Hills Solar I, LLC; and Hidden Hills Solar II, LLC, please find attached electronic copies of Data Response, Set 1D, which responds to Staff's data requests numbers 97 through 135 for the Hidden Hills Solar Electric Generating System (HHSEGS) Project which were filed on December 6, 2011.

In addition, due to the sensitive nature of cultural resources data responses, the following items are being filed under separate cover with a repeated request for confidentiality:

- Figures: DR107-1a through 1e; DR112-1; DR113-1 and 2; and DR124-1
- Attachments: DR100-1, DR119-1; and DR126-1

Please call me if you have any questions.

Sincerely,

CH2M HILL

A handwritten signature in blue ink, reading "John L. Carrier".

John L. Carrier, J.D.
Program Manager

Encl.

c: POS List
Project file

DOCKET

11-AFC-2

DATE JAN 06 2012

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Data Response 1D

Hidden Hills

Solar Electric Generating System

(11-AFC-2)



Application for Certification
Hidden Hills Solar I, LLC; and Hidden Hills Solar II, LLC

January 6, 2012

With Technical Assistance from



Hidden Hills Solar Electric Generating System (HHSEGS)

(11-AFC-2)

**Data Response, Set 1D
(Response to Data Requests 97 though 135)**

Submitted to the
California Energy Commission

Submitted by
**Hidden Hills Solar I, LLC; and
Hidden Hills Solar II, LLC**

January 6, 2012

With Assistance from
CH2MHILL
2485 Natomas Park Drive
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Contents

Section	Page
Introduction	1
Cultural Resources (97-134)	2
Waste Management (135)	36

Figures

DR98-1	HHSEGS Project Area
DR101-1	Land Surface Units
DR101-2	Desert Pavement
DR101-3	Gravel Lag
DR110-1	Groundwater Dependent Vegetation in the Study Area
DR107-1a-e	Previously Recorded Sites (Confidential)
DR112-1	Archaeological Survey Results Map (Confidential)
DR113-1	Prehistoric Archaeological Resources (Confidential)
DR113-2	Historic Archaeological Resources (Confidential)
DR124-1	Identified Trails and Roads in the Project Area (Confidential)
DR134-1	Area of Denser Annual Vegetation

Attachments

DR100-1	Interim Assessment of Paleontological Sensitivity (Confidential)
DR111-1	Historic Maps
DR119-1	Isolate DPR Forms (Confidential)
DR126-1	DPR Forms for Roads (Confidential)

Introduction

Attached are Hidden Hills Solar I, LLC, and Hidden Hills Solar II, LLC (collectively, “Applicant”) responses to the California Energy Commission (CEC) Staff’s data requests numbers 97 through 135 for the Hidden Hills Solar Electric Generating System (HHSEGS) Project (11-AFC-2). The CEC Staff served these data requests on December 6, 2011. The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as provided by CEC Staff and are keyed to the Data Request numbers (97 through 135). New graphics or tables are numbered in reference to the data request number. For example, the first table used in response to Data Request 15 would be numbered Table DR15-1. The first figure used in response to Data Request 15 would be Figure DR15-1, and so on. Figures or tables from the HHSEGS Application for Certification (“AFC”) that have been revised have “R1” following the original number, indicating revision 1.

Figures and additional documents (e.g., Attachments) submitted in response to a data request are grouped together at the end of this document and are also numbered to match the data request number. The figures and attachments are in numerical order of the data request number.

Cultural Resources (97-134)

ANALYTIC FRAMEWORK

Project Description

BACKGROUND

Specific data on the lateral extent, the height above ground, and the subsurface depth of different project components is critical to the establishment of the appropriate framework for an environmental analysis. Based on information provided in AFC sections 1 and 2, and Appendices 2A–C and G, staff is unable to discern the anticipated depth to which construction of a number of key project components would disturb the ground, including the excavation depths for the power tower foundations, steam turbine generators, pipeline trenches for the natural gas pipeline, and pylons for the heliostat assemblies. Absent this information, staff has no way to delineate the appropriate subsurface extent of the cultural resources analysis for the proposed project. Such information may also facilitate narrowing the scope of any subsurface investigations that may become necessary.

DATA REQUEST

97. Please identify, with as much detail as the present state of the proposed project's design will permit, where ground disturbance (surface or excavation) would occur on the proposed project site during project construction and operation, including both the overall extent of the area(s) to be disturbed and individual locations of all project components, including the facility buildings, linears, ancillary facilities, parking, roads, and temporary construction parking, laydown, and operational areas. Also, please provide the footprint (length, width, and depth) of any excavations, including foundations and test trenches. For the purposes of staff's cultural resources analysis, it is particularly critical to know the portions of the proposed project area where construction excavation would exceed one meter, or approximately three feet in depth.

Response: Five sets of E-sized documents listed in Table DR97-1 are being provided in response to this data request. (Electronic copies will be provided to others upon request.) In addition to these plans, Table 5.1D-1 (AFC Volume 2, Appendix 5.1D) provides structure dimensions. Design information is not yet available as to the foundation depths of all of the facilities and structures. Generally, drawings showing the foundation design, electrical duct banks (that may be underground) and pipeline drawings are not available until shortly before construction begins, nor is detailed design required at this stage of the certification process. Unless otherwise shown in the drawings, it can be assumed that all surface-type disturbances (e.g., roads, parking lots, etc.) would have a disturbance depth of less than one meter. All buildings and larger structures (e.g., tanks, towers, etc.) would have foundations greater than one meter. Pylons would generally be inserted to a depth of greater than one meter. Typically, they will be vibrated into the ground. In cases where there are too many rocks, they may be predrilled then vibrated. No soil is removed during the pre-drilling process. The pylon locations have not been finalized and, therefore, are not shown in the drawings.

TABLE DR97-1
List of Drawings Provided

Document No.:	Rev No.:	Description:
C-0001	D	Civil Project Information, Abbreviations, Legend, Notes, Vicinity Map and Control Data (C-0001), Revision: For Review (D, Sep 15, 2011)
C-0010	B	Civil Manufacturing Area Construction Phase Site Plan(C-0010), Revision: For Review (B, Sep 15, 2011)
C-0020	B	Civil Tower Unit #1 Construction Phase Site Plan (C-0020),Revision: For Review (B, Sep 15, 2011)
C-0030	B	Civil Tower Unit #2 Construction Phase Site Plan (C-0030),Revision: For Review (B, Sep 15, 2011)
C-1000	E	Civil Overall Site Plan (C-1000), Revision: For Review (E, Sep15, 2011)
C-1001	E	Civil Partial Site Plan Sheet 1 of 3 (C-1001), Revision: For Review (E, Sep 15, 2011)
C-1002	E	Civil Partial Site Plan Sheet 2 of 3 (C-1002), Revision: For Review (E, Sep 15, 2011)
C-1003	D	Civil Partial Site Plan Sheet 3 of 3 (C-1003), Revision: For Review (D, Sep 15, 2011)
C-1010	D	Civil Common Area Enlarged Site Plan (C-1010), Revision: For Review (D, Sep 15, 2011)
C-1020	D	Civil Tower Unit #1 Enlarged Site Plan (C-1020), Revision: For Review (E, Sep 15, 2011)CH2M HILL, Inc.
C-1030	E	Civil Tower Unit #2 Enlarged Site Plan (C-1030), Revision: For Review (E, Sep 15, 2011)CH2M HILL, Inc.
C-2000	E	Civil Overall Grading and Drainage Plan (C-2000), Revision: For Review (E, Sep 15, 2011)CH2M HILL, Inc.
C-2010	B	Civil Common Area Enlarged Grading and Drainage Plan (C-2010), Revision: For Review (B, Sep 15, 2011)CH2M HILL, Inc.
C-2020	B	Civil Tower Unit #1 Enlarged Grading and Drainage Plan (C-2020), Revision: For Review (B, Sep 15, 2011)CH2M HILL, Inc.
C-2030	E	Civil Tower Unit #2 Enlarged Grading and Drainage Plan (C-2030), Revision: For Review (E, Sep 15, 2011)CH2M HILL, Inc.
C-2100	A	Civil West Perimeter Road - Road Plan & Profile 1 (C-2100), Revision: For Review (A, Sep 15, 2011)CH2M HILL, Inc.
C-2101	A	Civil West Perimeter Road - Road Plan & Profile 1 (C-2101), Revision: For Review (A, Sep 15, 2011)CH2M HILL, Inc.
C-2102	A	Civil West Perimeter Road - Road Plan & Profile 2 (C-2102), Revision: For Review (A, Sep 15, 2011)CH2M HILL, Inc.
C-2103	A	Civil West Perimeter Road - Road Plan & Profile 2 & 3 (C-2103), Revision: For Review (A, Sep 15, 2011)CH2M HILL, Inc.
C-3000	A	Civil Overall Utilities Plan (C-3000), Revision: For Review (A, Sep 15, 2011)CH2M HILL, Inc.
C-3010	A	Civil Common Area Enlarged Utilities Plan (C-3010), Revision:

TABLE DR97-1
List of Drawings Provided

Document No.:	Rev No.:	Description:
		For Review (A, Sep 15, 2011)CH2M HILL, Inc.
C-3020	A	Civil Tower Unit #1 Enlarged Utilities Plan (C-3020), Revision: For Review (A, Sep 15, 2011)CH2M HILL, Inc.
C-3030	A	Civil Tower Unit #2 Enlarged Utilities Plan (C-3030), Revision: For Review (A, Sep 15, 2011)CH2M HILL, Inc.
C-3110	A	Civil 10" Dip Fire Main Profiles (C-3110), Revision: For Review (A, Sep 15, 2011)CH2M HILL, Inc.
C-5000	A	Civil Erosion and Sedimentation Control Plan and Details (C-5000), Revision: For Review (A, Sep 15, 2011)CH2M HILL, Inc.
C-6000	A	Civil Sections and Details Sheet 1 (C-6000), Revision: For Review (A, Sep 15, 2011)CH2M HILL, Inc.
C-6001	A	Civil Sections and Details Sheet 2 (C-6001), Revision: For Review (A, Sep 15, 2011)CH2M HILL, Inc.
C-6002	A	Civil Sections and Details Sheet 3 (C-6002), Revision: For Review (A, Sep 15, 2011)CH2M HILL, Inc.
M-SK-001	1	Gas Pipeline Plan (Changes prior gas meter location) (Nov 15, 2011)
E-SKE-003/1	1	Site Plot Plan (relocated the switchyard)(Oct 25, 2011)
E-SKE-003/2	2	Common Area Plan View (Oct 25, 2011)
E-SKE-003/3	2	230kV Switchyard Plan View (Oct 25, 2011)
E-SKE-003/4	0	Unit 1 Line Underground to Above Ground Transition (July 26, 2011)
E-SKE-003/5	1	Unit 2 Line Underground to Above Ground Transition (Oct 25, 2011)
E-SKE-003/6	0	Power Block 1, 230 kV Underground Plan (July 26, 2011)
E-SKE-003/7	0	Power Block 2, 230 kV Underground Plan (July 26, 2011)

Project Area of Analysis

BACKGROUND

The “project area of analysis” is a concept that staff uses to bound the geographic area in which the proposed project has the potential to affect cultural resources. The effects that a project may have on cultural resources may be immediate, further removed in time, or cumulative. They may be physical, visual, auditory, or olfactory in character. The geographic area that would encompass a consideration of all such effects may or may not be one uninterrupted expanse. It may include the project area, which would be the site of the proposed plant (project site), the routes of requisite transmission lines and water and natural gas pipelines, and other offsite ancillary facilities, in addition to one or several discontinuous areas where the project could be argued to potentially affect cultural resources.

The preliminary configuration of the project area of analysis for staff’s consideration of HHSEGS reflects the limitations that CEQA places on dual-state projects. Staff presently sees the core of the project area of analysis as the project site, which includes the areas of Solar Plant 1 and Solar Plant 2, the Common Area, and the Temporary Construction Area

(Figure 2.1-2, AFC). The eastern boundary of the project site is coincident with the California-Nevada border. Elements of the project constructed in Nevada, such as the transmission lines, are not assessed by staff for environmental effects within Nevada. However, impacts resulting from project activities in California, regardless of location, and impacts to resources in California, regardless of where the impacts originate, will need to be evaluated and mitigated. Therefore, the project area of analysis for cultural resources may extend beyond California's boundaries.

Staff is presently aware of two areas in Nevada that should be discontinuous components of the project area of analysis. One of these areas encompasses the portion of the shallow step fault zone that defines the eastern edge of the project site bolson and along which the HHSEGS power tower would impose a significantly discordant visual presence. Portions of the step fault zone, which appears to be part of the State Line fault system, have been the focus of relatively intense Native American activity for at least the last two thousand years, related to the periodic presence of surface springs and seeps along the zone and to natural groves of mesquite that have become encased in an archipelago of sand dunes along the zone. The portions of the fault zone that are coincident with these mesquite groves and the surface springs and seeps, and the archaeological deposits that relate to the use of these natural resources may qualify as an archaeological landscape, a constellation of passively and actively managed natural features and material culture remains that may be significant for its association with behavioral patterns that have made an important contribution to the Native American history of this portion of the eastern Mojave Desert. Additionally, it may have potential importance for the information that it may be able to provide about the history of Native American life in the region. In order to be able to convey the potential associative significance of the potential landscape, it must reasonably retain integrity of setting, feeling, and association. Staff will need to assess whether the landscape is a historical resource for its associative values and, if so, whether the visual intrusion of the HHSEGS power tower compromises the relevant aspects of the resource's integrity. Beyond the landscape as a whole, constituent places or resources within the landscape may also be significant as stand-alone cultural resources. Among such places may be some of the named springs and seeps along the step fault zone such as Stump, Brown, and Mound springs. As part of the BLM's review obligations under Federal statute and regulation, the concept of this landscape, its potential historical significance, and the potential for the construction, operation, and maintenance of the project's transmission lines and natural gas pipeline to disturb or destroy the associative and information values of that landscape will need to be given formal consideration, as will the potential significance of and effects to the important stand-alone resources within it.

A second area in Nevada that staff foresees as a discontinuous component of the project area of analysis encompasses Mount Charleston and other prominent peaks of the Spring Mountains. On the basis of early consultation with local Native American communities and relying also on the basic tenants of ethnogeography, it is reasonable to assume a relatively high probability that these peaks are important elements of the mythologies and religions of different Native American groups in the region. As such, staff believes that the Energy Commission needs to consider whether and how the proposed project may significantly degrade the ability of any these natural features to convey the significant associative values they may possess.

There also appear to be areas to the west of the project site that should be further discontinuous components of the project area of analysis. Prominent peaks of the Nopah Range also appear, on the basis of Native American consultation to date, to be places known and named in local Native American mythological and religious repertoires. Among

the lower reaches of the range, there may also be places where the sight of the HHSEGS power tower would degrade the ability of key places and trails to convey their respective associative values.

DATA REQUEST

98. Staff has sketched out, in relatively broad strokes, a preliminary basis for the HHSEGS project area of analysis. Please refine and consolidate these areas of concern, including those outside California, and plot out the boundaries of the resultant project area of analysis on a map of no less than a 1:24,000 scale. The project area of analysis is and will remain the fundamental basis for all subsequent requests for information related to the potential effects of the proposed project on cultural resources. Staff's preliminary iteration, as noted in the Background above, is the foundation for the present cultural resources data requests. If the applicant's concept of the project area of analysis differs significantly from staff's, please provide an additional map or overlay, at a minimum of 1:24,000 scale, delineating the applicant's preferred project area of analysis and justification for excluding any areas proposed in the Background discussion above.

Response: Figure DR98-1 is a map showing the project area of analysis (PAA) appropriate for the resource assessment and impact analysis for the project. It encompasses the HHSEGS project site, the temporary construction laydown area to the west, and a 200-foot buffer around the site. The scope of the PAA is appropriate given that these are the areas potentially affected by the project's activities.

NATURAL AND CULTURAL CONTEXTS

Geoarchaeology

BACKGROUND

The Cultural Resources section of the September 2011 AFC Supplement B, Hidden Hills Solar Electric Generating System provides new, insightful information on the paleoenvironment and the historical geomorphology of the proposed project area that more clearly contextualizes the applicant's revised evaluations of the historical significance of identified archaeological deposits. The Geomorphic Setting of the Project Area subsection (p. 66) cites data from recent geotechnical and paleontological investigations to place the project site on the floor of the axial basin of Pahrump Valley atop a broad deposit of relatively old, hardened basin fill that ranges in texture from silty clay to clayey sand. This hardened fill is apparently exposed at the surface across a broad swath of the western portion of the project site and has moderate to dense gravel lags and saltbush vegetation. Alternately, alluvial deposits of silty sand apparently cover eastern portions of the project site. These deposits have sparse to rarely dense gravel lags and creosote bush scrub vegetation. The revised geomorphic contexts that Supplement B provides for individual archaeological sites appear to draw heavily from this dichotomous description of the near-surface geology of the project site. It is unclear how the individual archaeological sites identified to date were assigned to particular geomorphic contexts between the production of the original cultural resources technical report (CH2M HILL 2011), in which the geomorphic contexts were largely undescribed, and the production of Supplement B, and whether additional fieldwork was conducted in the interim, or field data from other technical investigations was retroactively applied to the extant cultural resources data. If the latter scenario were the case, there would presumably be a new map of the surface geology of the project site or at least the data necessary to produce such a map. This data has

important implications for better understanding the archaeological deposits on the project site.

Staff's initial impression of the archaeological site distribution pattern for prehistoric archaeological deposits across the project site is that the frequency of surface archaeological deposits progressively increases as one approaches the mesquite groves and surface springs and seeps of the step fault zone immediately to the east of the project site boundary. If, as Supplement B reports, the alluvial silty sands across the eastern portion of the project site thicken as one progresses toward the east, there would appear to be a strong likelihood that the archaeological deposit frequency or density across that portion of the project site is much higher than the surface survey data alone would indicate. The AFC discusses the historical significance of some of the scatters of stone tool-making debris (lithic scatters), apparently in terms of the presumed limited distributions of certain types of toolstones across the project site. The evaluations of a number of these lithic scatters cite the limited distribution of one or another toolstone as the primary causal factor in the location of particular scatters without any explicit consideration of the possible widespread distribution of those same toolstones across the project site, where the primary causal factor for archaeological site location may have been behavioral choices of the people responsible for the lithic debris. Reference to field data on the natural distributions of potential toolstones among the lag deposits of the basin fill and alluvial silty sands would provide a more rigorous case for the applicant's assertions about the causal factors for the distribution of lithic scatters across the project area landscape.

Clarification of the geologic data is critical for staff to understand the physical contexts that support the archaeological deposits in the project area of analysis and, ultimately, to develop reliable interpretations of and recommendations about the archaeological site inventory for that area.

DATA REQUESTS

99. Please provide the "Preliminary Geotechnical Report" cited in Appendix 5.4A of the AFC, in electronic format, and any subsequent geotechnical reports that have been prepared.

Response: An electronic copy of the Preliminary Geotechnical Report was provided as Appendix 5.4A in Volume 2 of the AFC. An additional copy of Appendix 5.4A is included on the accompanying CD-ROM.

100. Please provide the technical report for the paleontological investigation referenced in the Cultural Resources section of Supplement B of the AFC (p. 66), preferably in electronic format.

Response: A copy of the confidential paleontological investigation referenced in the *Cultural Resources* section of Supplement B of the AFC is provided as Attachment DR100-1. An electronic copy of the report is included in the accompanying CD-ROM.

101. Please provide a map, at no less than a 1:24,000 scale, of the basin fill and alluvial silty sands identified in Supplement B to be the two principal Late Quaternary sedimentary units on the project site, as well as the landforms and landform features that compose the step fault zone immediately to the east of the eastern project site boundary. As staff presently understands the geomorphology of the project site, the above two sedimentary units contribute a portion of the constituent sediments that make up the predominant landform for the project site, the floor of the local bolson.

Staff needs to better understand the depositional regimes inherent to the interface between the floor of the bolson and those of the step fault zone.

Response: In Applicant's December 27, 2011 letter, Applicant committed to providing Staff with the information reasonably available to Applicant, but objected to the portion of this data request asking for a map as burdensome and not reasonably necessary for the Commission decision in this proceeding. Without waiving this objection, Applicant provides the following response.

Please see Figure DR101-1. The following surficial geologic units are identified on that map:

- Qa Late Holocene sandy alluvium blanketing the eastern portion of the project area. The abundance of reworked eolian sands suggests a late Holocene age and correlation with Haynes' (1967) Unit G of the Las Vegas Formation. Considered to be finer-grained facies of Lundstrom et al.'s (2002) Units Qau and Qay. Qa1 alluvium originates from the Stateline Fault System to the northeast, while Qa2 alluvium comes from a separate, more integrated wash system to the east (Figure 101-1). This substrate supports burrobush-creosote bush (*Ambrosia dumosa* – *Larrea tridentata*) scrub.
- Qbf Quaternary basin fill of probable Pleistocene age. Carbonate and clay-rich, fine grained massively bedded basin fill possessing a typically high albedo. Identified as fluvial units (Qfy, Qfo) by Lundstrom et al. (2002), and assigned a Pleistocene age in this studies associated with this project. Erosional exposures reveal that this basin fill unit is mantled by Unit Qa to the east of the project area (Figure 101-1), and is therefore older than Unit Qa. Supports sparse saltscrub (*Atriplex* spp., *Salsola pestifer*) vegetation. To the south, it is mantled by a thin veneer of older fluvial gravel (Unit Qf, see below)
- Qf Quaternary fluvial gravels of Holocene to possible Late Pleistocene age mantling Qbf in the southern portion of the project area (Figure 101-1). Often Qf is only a thin veneer of fluvial gravel. However, in part of the southwestern portion of the site older, well rounded fluvial gravels armor the basin fill and have created subdued, inverse-topographic landforms. The gravel armoring here qualified as poorly to moderately developed desert pavement (Figure DR101-2). This is the only area in the project site where desert pavement exists (Figure DR101-1).

102. Please identify and provide a discussion of the data that forms the basis for dating the basin fill as "likely at least Late Pleistocene in age", as indicated in the AFC Supplement B, Cultural Resources (p.66).

Response: Basin fill sediments (Qbf; Figure DR101-1) underlie late Holocene alluvium (Qa; see data response 103, below) and therefore are likely to be older than late Holocene in age (>4,000 B.P.). There was a regional hiatus in deposition during the middle Holocene (7,500 to 4,000 B.P.), while the preceding early Holocene and Late Pleistocene witnessed widespread accumulation of sediments near artesian spring systems and on "phreatophyte flats" (see Quade et al., 1995; Haynes, 1967; Spaulding 1990, 1991). The basin fill sediments in the project area are dominated by massively bedded silts and clays typical of phreatophyte flats. Carbonate nodules are common and a lag surface of nodules ("popcorn tufa") is a common feature of the high-albedo areas in the western portion of the project area (Figure DR101-1). These conform to the attributes of phreatophyte flat sediments *sensu* Quade et al. (1995),

and such sediments can indeed be expected downstream of what was a major Pleistocene groundwater discharge area along the fault lineaments east of the project area. The common to abundant carbonate nodules present in basin fill sediments are evidence of a past history of phreatic, or near-surface groundwater conditions (ibid.).

Therefore, these basin fill sediments have the attributes of a Pleistocene phreatophyte flat deposits. This shallow-groundwater depositional regime ended by about 8,000 B.P. with post-Pleistocene desertification, and widespread deflation likely followed during the middle Holocene (Haynes, 1967; Quade et al., 1995; Spaulding, 1991). During this period it is likely that the upper portion of Qbf was eroded, and consequently the present surface of Qbf is likely to be older than early Holocene in age.

References

Haynes, C. V., Jr. 1967. Quaternary geology of the Tule Springs area, Clark County, Nevada. In (H.M. Wormington and D. Ellis, Eds.) *Pleistocene studies in southern Nevada*. Nevada State Museum Anthropological Papers 13:15-104.

Lundstrom, S. C., S. A. Mahan, R. J. Blakely, J. B. Paces, O. D. Young, J. B. Workman and G. L. Dixon. 2002. *Geologic Map of the Mound Spring Quadrangle, Nye and Clark Counties, Nevada, and Inyo County, California*. U. S. Geological Survey, Miscellaneous Field Studies Map MF-2339. Version 1.0. Denver, CO.

Quade, J., M. D. Mifflin, W. L. Pratt, W. McCoy, and L. Burckle. 1995. Fossil spring deposits in the southern Great Basin and their implications for changes in water-table levels near Yucca Mountain, Nevada, during Quaternary time. *Geological Society of America Bulletin* 107:213-230.

Spaulding, W. G. 1990. Vegetational and climatic development of the Mojave Desert: The last glacial maximum to the present. In (J. L. Betancourt, T. R. Van Devender, and P. S. Martin, eds.) *Packrat middens: The last 40,000 years of biotic change*. University of Arizona Press, Tucson. pp. 166-199.

Spaulding, W. G. 1991. A middle Holocene vegetation record from the Mojave Desert and its paleoclimatic significance. *Quaternary Research* 35: 427-437.

103. Please clarify whether the gravel lag on portions of the basin fill are, in fact, desert pavements and, if so, please include the location(s) of any areas of desert pavement on the geomorphic map requested above. In the AFC Supplement B, Cultural Resources (p. 66), the applicant explicitly states that the gravel lag of the alluvial silty sands lack the principal attributes of a classic desert pavement. However, it is still unclear whether the lag across the older basin fill possesses those same attributes and the revised archaeological site descriptions in Supplement B are equivocal on the issue. The description for site S-3 places that artifact assemblage on a desert pavement, while the descriptions for sites S-6, S-23, S-AF-1, and S-AF-2 place those assemblages on a "gravel to cobble lag resting on Plio-Pleistocene valley fill."

Response: The map presented as Figure DR101-1 shows that desert pavement surfaces are actually restricted to a small area in the southwestern part of the PAA. This pavement is composed of well-rounded moderately well sorted fluvial gravels (Figure DR101-2), and not poorly sorted alluvium. Elsewhere across the project site, alluvial surfaces of Unit Qa can possess a

moderate gravel lag; however, this lag does not meet the criteria of desert pavement in terms of the following relative attributes:

- Absence of bar-and-swale topography
- Uniformity of clast size
- Roundedness
- Interlocking nature of clasts (no subsurface showing)
- Desert varnish development on resistant lithologies

The dispersed, poorly sorted, angular nature of a typical gravel lag developed can be seen in Figure DR103-1 (contrast this with the pavement shown in Figure DR101-2).

Figure DR103-1 also shows that older basin fill can be at very shallow depth. And while “Plio-Pleistocene,” implying a potential age of up to 5 million years or so (early Pliocene), is certainly stating the outer range of potential age of Qbf, at localities near the state line, Quaternary uplift/upwarp associated with the nearby faults appears to be exposing older sediment. The exposure shown in Figure DR103-1 is less than 100 feet from the stateline and 500 to 1000 feet from the first fault scarp to the east.

104. Please provide a discussion of the field methods and resultant field data on the natural distributions of potential toolstones among the lag deposits of the basin fill and the alluvial silty sands that support the AFC’s interpretations of the causal relationships between particular toolstone sources and archaeological site locations. In addition, please provide a map, at no less than a 1:24,000 scale, of those natural toolstone distributions. In the absence of such data, please prepare a plan for a field study to acquire such data. Upon staff approval of the plan, execute the approved field study and submit a technical report of the results of the investigation.

Response: In Applicant’s December 27, 2011 letter, Applicant committed to providing Staff with the information reasonably available to Applicant by January 20, 2012, but objected to a portion of this data request asking for a map of toolstone sources as burdensome and not reasonably necessary for the Commission decision in this proceeding.

Without waiving its objection or notice for additional time, the Applicant provides the following response.

The requested discussion of field methods is included in both the AFC and technical report. Specifically, these sections are: Section 5.3.3.6.2, Field Survey, in the AFC; and Appendix 5.3B, Methods, in the technical report. Additional discussion of methodology is included in Supplement B. The research design in Supplement B also includes a section on Lithic Technology and Procurement, as well as information regarding lithic scatters and lithic procurement as these site types specifically relate to environments similar to the HHSEGS project area.

Toolstone in the PAA is chiefly chert nodules weathered from the Paleozoic limestones of the surrounding mountains, and found as occasional cobbles of higher grade toolstone among primarily limestone alluvium. Toolstone is therefore not widely scattered across the PAA. Furthermore, the HHSEGS project site has a very limited distribution of potential toolstones; the only cobbles of suitable flaking size are located along the eastern edge of the project. This is due to the presence of fault scarps to the east of the state line that expose older alluvium on their hanging walls, which face the project area. These clasts then erode

from those exposures and comprise the eastern (coarser-grained) facies of the limited fans than enter the area from the east (surfaces labeled Qa in Figure 101-1). Cobbles are quite rare farther to the west as clast size quickly attenuates to the west across the Qa surfaces, and clasts of toolstone become even more scarce. Hence, clasts of suitable toolstone are not expected beyond the eastern edge of the HHSEGS project area.

Paleoenvironment

BACKGROUND

The paleoenvironmental context of the potential archaeological landscape that encompasses the ancient mesquite groves, springs, and seeps across portions of the step fault zone is critical to understanding the chronology of the use of this area, the age of related archaeological sites, and the relative importance that this zone may have played in the broader ecological milieu of Pahrump Valley over the last several millennia. Although the *Environmental Setting and Depositional Environment* and *Late Quaternary Environmental Changes* subsections of the AFC Supplement B, *Cultural Resources* section provide very useful contextual information on the historical geomorphology and the paleohydrology of the project site at regional and valley-wide scales, staff needs information more specific to the probable local foci of past Native American activity.

DATA REQUESTS

105. Please develop and submit, for staff review and approval, a research design for the investigation of the paleohydrology, aboriginal water management, paleoecology, and ethnobotany of the portion of the step fault zone that stretches from Mound Spring to Stump Spring. The research design should include collaboration among professionals in the disciplines of Quaternary geology or science, geoarchaeology, economic or ethnobotany, and Great Basin or Southwest archaeology. The research design should, at a minimum, set out contexts, theory, and field methods appropriate to the investigation of the research themes above, and other themes as appropriate to establish the character and relative importance of the step fault zone, through prehistoric and historic times, for the acquisition, preparation, and consumption of multiple, key natural resources. It should facilitate the acquisition of information on the age of the mesquite groves and coppice dunes that encase them, whether the mesquite trees exhibit any physical evidence that would indicate whether and how the groves were actively managed, the antiquity of the use of springs and seeps in the step fault zone and the chronology of their flow rates, whether physical evidence exists that would indicate whether and how flows may have been actively managed in the pursuit of such goals as increasing surface flows or irrigating horticultural plots, and how the predominant vegetation associations along the step fault zone may have changed through time.

Response: In Applicant's December 27, 2011 letter, the Applicant objected to this data request as burdensome and not reasonably necessary for the Commission decision in this proceeding. Without waiving this objection, Applicant provides the following response.

The level of effort requested by CEC staff is unnecessary to adequately characterize the cultural resources potentially affected by HHSEGS. As shown in Figure DR110-1, the project footprint is located almost 2 miles from the closest of the areas discussed above. This objection notwithstanding, at the December 17, 2011 workshop, CEC Staff indicated it would be helpful to have a better understanding of the frequency of shallow groundwater-

coppice dune systems in the valleys of the northeastern Mojave Desert, and that the knowledge would be helpful in putting the characteristics of the step fault zone in perspective.

Provided below is a summary list of the major coppice dune and shallow groundwater systems in the northeastern Mojave Desert, defined as lying between the Muddy River in the east and the Mojave Sink in the west, and north of the Interstate 15 corridor. This listing references inferred pre-1950 conditions.

1. Muddy River Valley (ca. 114°40' W, 36°46'N)¹

Representative riparian areas: Warm Springs, Muddy Spring

2. Coyote Springs Valley (ca. 114°58' W, 36°50'N)

Representative riparian areas: Coyote Springs

3. Pahrnagat Valley (ca. 115°08' W, 37°18'N)

Representative riparian areas: Pahrnagat Lakes

4. Las Vegas Valley (ca. 115°10' W, 36°10'N)

Representative riparian areas: Duck Creek, "The Meadows" (*Las Vegas*), Tule Springs, Corn Creek Springs

5. Indian Springs Valley (ca. 115°40' W, 36°35'N)

Representative riparian areas: Indian Springs, Cactus Spring

6. Amargosa Desert (ca. 116°20' W, 36°30'N)

Representative riparian areas: Point of Rocks Spring, Carson Slough, Big Spring, Devils Hole, Ash Meadows

7. Oasis Valley (ca. 116°43' W, 37°00'N)

Representative riparian areas: Oasis Hot Springs, Goss Spring, Springdale

8. Pahrump Valley (ca. 116°00' W, 36°15'N)

Representative riparian areas: Manse Spring, Mound Spring, Stump Spring, extensive mesquite thickets

9. Sandy Valley (ca. 115°35' W, 35°45'N)

Representative riparian areas: Unnamed but extensive mesquite thickets and coppice dunes.

10. Shadow Valley (ca. 115°42' W, 35°28'N)

Representative riparian areas: Valley Wells, Cottonwood Springs

106. Once staff has approved the proposed research design, please execute the study and provide a technical report of the field and laboratory data, as well as analyses and interpretations of that data relative to the original research design.

Response: In Applicant's December 27, 2011 letter, the Applicant objected to this data request as burdensome and not reasonably necessary for the Commission decision in this proceeding. As more fully described in the letter, the development of the research design requested in Data Request 105, and the execution of the research design request in Data Request 106, is

¹ Therefore, spring systems such as those of the Death Valley and Tecopa Basin are considered in the central Mojave Desert.

not required by either the Warren Alquist Act or CEQA, and would be unreasonably burdensome.

Prehistoric Context

BACKGROUND

An integral part of the construction and assessment of the cultural resources inventory for a proposed project is to research any prior work in the vicinity of the proposed project area in order to formulate sound expectations for the field research and to help assess the adequacy and interpret the meaning of the results of that research. This was the purpose and intent of staff's requests of the applicant during data adequacy to develop a discussion of the prehistoric archaeology of the immediate project area vicinity and to explain what the archaeology looks like on the ground. The discussion provided in AFC Supplement B, Cultural Resources, does not provide sufficient discussion to facilitate staff's assessment, particularly of the prehistoric archaeological site inventory. The fourth and fifth paragraphs of the *Records Search Results* subsection of Supplement B (pp. 25 and 26) provides no locational data for a number of prehistoric archaeological sites that were found as a result of previous surveys in and around Pahrump Valley, nor does it provide geomorphic or other environmental contexts for many of the sites. The absence of this information prevents staff from deriving any expectations for the prehistoric archaeological site types that would be anticipated in the proposed project area. This information is necessary for staff to assess the adequacy of the prehistoric archaeological inventory for the proposed project area, interpret the results of the inventory effort, and acquire a reasonable command of the archaeological record of the project area of analysis.

DATA REQUESTS

107. Please provide a map of a scale appropriate to the depiction of the locations of the archaeological resources in the records search referred to in AFC Supplement B, *Records Search Results* subsection.

Response: A set of maps on a 1:24,000 scale USGS topographic quadrangle map was prepared which includes all of the sites discussed in Supplement B, for which location data is available. Location data was not available for all of the sites discussed in Supplement B, including the sites located on the Hidden Hills SEGS site. This confidential map is labeled Figure DR107-1, and will be submitted under a repeated request for confidential designation.

108. Please provide further discussion analyzing the character and location of the subject resources relative to geomorphic and other relevant environmental parameters, such as surface and subsurface hydrology, vegetation associations that include significant economic plant species and support significant economic animal species, known sources of toolstone, and landforms with potential for the ascription of cultural value.

Response: In Applicant's December 27, 2011 letter, the Applicant objected to this data request as burdensome and not reasonably necessary for the Commission decision in this proceeding. Without waiving this objection, Applicant provides the following response.

AFC Supplement B includes a research design for the cultural resources assessment that includes expected site types and survey results based on environmental factors in the HHSEGS project vicinity. Supplement B also includes information regarding important plant and animal species for prehistoric populations, as well as some discussion about lithic procurement practices in desert environments.

109. Please provide complete and detailed descriptions of the archaeological sites and features in the AFC Supplement B, *Records Search Results* subsection. For archaeological features, please provide, at a minimum, the dimensions, orientations, material composition, inferred construction methods, and typical associations of the subject features. For archaeological sites, please provide the dimensions, geomorphic contexts, artifact assemblage compositions, material patterning, and inferred depositional origins and taphonomy of subject sites.

Response: In Applicant's December 27, 2011 letter, Applicant committed to providing Staff with the information reasonably available to Applicant, but objected to a portion of this data request because the information requested is not reasonably available to the Applicant and the information requested is not reasonably necessary for the Commission decision in this proceeding. Without waiving this objection, Applicant provides the following response.

Complete information for these sites has already been provided in the AFC and AFC Supplement B for the archaeological sites and features identified in the *Records Search Results*. However, many of the site records lacked the above-requested detailed information for these sites, such as dimensions, construction methods, orientations, and material composition, and this information is not easily obtainable as it is not part of the records.

Notably, these sites are all located outside the HHSEGS PAA and were reviewed only to provide a summary of archaeology and site types found within the greater Pahrump Valley. Below is a summary of all the additional information available to CH2M Hill for the sites discussed in Supplement. B.

The Archaeology of the Pahrump Valley, Part II

The Manse Ranch site or the Bowman site, NY-809, is described as a temporary camp site located in "blow out areas" of migrating sand dunes (Rolf 1977). This site is located in Nye County, Nevada, approximately 10 miles north of the HHSEGS. Observed artifacts include shell beads, fire affected rock, ceramic fragments and lithic debris. Debitage, drill fragments, and bifaces were noted. Human remains were noted as scattered over the site. Several concentrations of fire affected rock were also recorded. The site record also notes that the site has been subjected to looting as its location is known to local collectors. The site area was recorded as 100 meters by 50 meters. Artesian wells are located within one mile of this site and a dry water course runs adjacent to the site. Observed plant communities are limited to the creosote community. Visibility was good at nearly 80 percent. The site record states that the geomorphology may be described as aeolian sand deposited in low hummocks or dunes in various states of deflation. Subsequent visits to this site by other researchers describe the vegetation as primarily bush scrub and mesquite thickets.

In the early 1980s excavations were conducted at the Bowman site. Cultural material from the Bowman site was collected during three years (1982-1984) of field schools conducted by Dr. Margaret Lyneis of the University of Nevada Las Vegas. At least 13 test units were excavated, overran area less than 5 percent of the site area. Cultural material was found as deep as 140 cm. However, the test units were never completed. Human remains encountered consisted of seven discrete burials. The excavations yielded over 3800 pieces of faunal material, ceramics, lithic debitage, fire affected rock, mollusk shell, and a total of 57 projectile points. Projectile point types appear to span the late Holocene (at least the last 4,000 years) and included Gatecliff contracting stem, Humboldt Elko, Rosegate and Desert Side Notch (Smith, 2007).

The Bolling Mound site, NY-10186, was excavated in 1996. This site is located in Nye County, Nevada, approximately 12 miles north of the HHSEGS. The site measures 100 meters by 100 meters. Artifacts were found at depths between 20 cm and 100 cm below the surface. Nine test units were excavated resulting in the discovery of over 500 pieces of debitage, 12 pieces of ceramics, firepits, and midden. The Bolling Mound Spring was located in the center of the site (Moskowitz, 1996).

The Stump Spring site, CK301 and CK4169, has both a prehistoric and historic component. This site is located in Clark County, Nevada, approximately 3.5 miles southeast of the HHSEGS. The prehistoric site is a camp or resource processing site while the historic component consists of a stone foundation with an associated trash scatter. Artifacts observed include a fragmentary Desert Side Notch projectile point, a utilized flake, a shell bead, and debitage representing all stages of flaking. Lithic materials include chert, quartzite, obsidian and rhyolite. Ceramic materials are reported to have Pueblo, Paiute, and lower Colorado River affiliations. Midden soils are observable over a wide area. Plant species include mesquite, creosote and widely scattered willow trees within the drainages. Topographically, the site includes coppice dunes on higher terraces overlooking a basin divided by a dry wash. Soils are chiefly derived from dune sands. Site dimensions are estimated at 30 meters by 200 meters, with a depth of 20 cm inferred from visible sidewalls within looters excavations.

Stump Spring is well recorded and was a well known stop along the Old Spanish Trail. The historic component of this site consists of a limestone rock foundation and a trash scatter associated with historic travel along the trail. The trash scatter measures 100 meters by 100 meters and includes such artifacts as hole-in-top cans, auto parts, whiteware fragments (unmarked), various glass fragments and wire cut nails. The scatter occurs over a wide area with some concentrations. The foundation is constructed of imported limestone cobbles and measures 2.4 meters (east to west) by 2 meters (north to south) with a wall thickness of 26 centimeters. Evidence of ditches and other earthen construction was noted on both sides of the wash (Townley 1967a, White and Myhrer 1989). The site has been impacted by erosion, looting, and off-road vehicles.

Mound Spring, NY-471, is another archaeological site in the Pahrump Valley that was centered on an artesian water source. This site is located in Nye County, approximately 3.5 miles northwest of the HHSEGS. The historic component of Mound Spring consists of the foundation and walls of an adobe structure, associated fence line, a trash scatter, and a pipeline that runs between the adobe and Mound Spring. The wall remnants are 1.5 meters in height and are constructed of reddish clay with desert pavement gravel and reinforced with various metal debris including wheel rims and rods. The structure exhibits two rooms. The large room is approximately 4 square meters and the smaller room is approximately 3 square meters. The door frame and window frames were constructed of wood. The frames, as well as the charred roof beams indicate the structure likely burned. Mound Spring is located approximately 200 meters to the south of this site. The associated trash scatter consists of metal and wooden artifacts that are associated with domestic habitation (Green 1980). Soils are characterized as gypsumous alluvium with various gravels. Observed plant species include creosote bush (*Larrea tridentate*), burrobush (*Ambrosia dumosa*), wild buckwheat (*Eriogonum*) and saltbush (*Atriplex spp*) (Green 1980).

The Hidden Spring² site (CK- 400) is characterized as a dense lithic and ceramic fragment scatter. This site is located in Clark County, Nevada, approximately 2 miles northeast of the HHSEGS. Townley suggests that this deposit was associated with a site located at Hidden Springs that was mostly destroyed before recordation. The site record describes the Hidden Springs site as a, “very concentrated site with possibility of above average stratification both in vertical depth and time periods represented” (Townley 1967b). Observed vegetation is described as scrub and salt cedar. The site is noted to be located in a sand dune 200 feet west of several abandoned buildings and the road that crosses the property. No estimate of size or area is given in the site record.

References

Green, Ellen. 1980. Site Record for 26 NY 471H. On file, Harry Reid Center for Environmental Studies, Las Vegas, Nevada.

Moskowitz, Kathy. 1996. Site Record for NY-10186, The Bolling Mound Site. On file, Harry Reid Center for Environmental Studies, Las Vegas, Nevada.

Myhrer, Keith. 1987. Class II Cultural Resource Inventory of Red Rock/Summa Exchange Land. Bureau of Land Management, Stateline Resource Area, Las Vegas Nevada.

Rolf, S. 1977. Site Record for NY 809. On file, Harry Reid Center for Environmental Studies, Las Vegas, Nevada.

Smith, Annette, J. 2007. Organization of Lithic Technology at the Bowman Site (26NY809) Pahrump Valley, Nye County, Nevada. Master’s Thesis. University of Nevada, Las Vegas.

Townley, John H. 1967a. Site Record for 26 CK 301. On file, Harry Reid Center for Environmental Studies, Las Vegas, Nevada.

Townley, John H. 1967b. Site Record for 26 CK 400. On file, Harry Reid Center for Environmental Studies, Las Vegas, Nevada.

White, William G and Keith Myhrer. 1989. Site Record for 26 CK 4169. On file, Harry Reid Center for Environmental Studies, Las Vegas, Nevada.

Historic Context

BACKGROUND

The sparse distribution of resources critical to human life in the Mojave Desert have had a major role in shaping the patterns of the historic use of the desert from the Spanish Colonial through the American eras. The portion of the desert that encompasses the proposed project area is adjacent to the intersection of an important route of travel, the Old Spanish Trail/ Mormon Road, and the once artesian springs and seeps of the shallow step fault zone that defines the eastern edge of the project site bolson. The distribution of both historical archaeological deposits and built-environment resources in and around the proposed project area undoubtedly reflect the influence of these resources. To properly interpret the cultural resources in the project area of analysis, staff needs to be able to document and establish a relatively complete local context for any historical archaeological deposits and built-environment resources. A map of the known roads, trails, springs, seeps, ranches, way-

² Also called the Hidden Hills Ranch Spring in other parts of this data response

stations, and other notable foci of historic activity in the vicinity of the proposed project area is essential for staff to contextualize the historic cultural resources in the project area of analysis.

DATA REQUEST

110. Please provide a map at a scale of at least 1:24,000 and sufficient to show the project area and the adjacent vicinity from, at a minimum, Mound Spring to Stump Spring. Depict and label places and historic features including, but not limited to, Hidden Hills Ranch, Manse Ranch, Manse Spring, Mound Spring and associated adobe, Bolling Mound and Bowman habitation sites, Stump Spring, Brown Spring, Old Spanish National Historic Trail, documented Old Spanish Trail/Mormon Road segments in Figure 3 of technical report, and any other places or historic features that are important in the history of the project area vicinity.

Response: To begin, it should be noted that several of the locations identified in this Data Request are located several miles away from the HHSEGS's PPA.

Please see Confidential Figures DR107-1a through e for the locations of the Bolling Mound and Bowman habitation sites. The historic Hidden Ranch, now known as the Hidden Hills Ranch, is labeled on the USGS topographic base map on Figure DR107-1a through e. The Manse Ranch, purchased by the Bowmans in the 1940s, is situated in the same location as the Bowman Site, NY-809. The Old Spanish National Historic Trail is shown on Figure 3 of the technical report. The above springs are shown on Figure DR110-1.

No springs were recorded within the Project Area of Analysis (PAA; see Data Response 98, above), and no geological evidence of artesian discharge is present within the PAA. The localities identified above are many miles beyond the limits of the PAA.

Information on the named springs, and other known discharge areas, within about 6 miles of the PAA had been gathered for a prior data request (Data Response 48) relating to biological resources. These data are provided again, this time with the springs labeled, in Figure DR110-1. Also shown is the extent of groundwater-dependent vegetation, primarily mesquite thicket, associated with areas of shallow groundwater. The maximum, Pleistocene extent of those groundwater discharge systems is represented by the white to buff sediments with high reflectivity (Figure DR110-1).

Additional mapping information relevant to the Old Spanish National Historic Trail and Old Spanish Trail/Mormon Road segments are presented in Data Response 124, below.

Archival Research

BACKGROUND

AFC Section 5.3.3.6.1 (p. 5.3-22) indicates that the following maps were reviewed to identify known historical land uses pertinent to the project site and vicinity:

1937 *Clark County, Nevada*, State of Nevada, Department of Highways, Sheets 1 and 3

1954 Official Highway Map of Nevada

1956 Official Highway Map of Nevada

1939 General Highway Map, Nye County, Nevada

1955 *Roach Lake* 15' USGS quadrangle topographic map

Staff needs to review these maps to conduct an independent assessment of the information provided.

DATA REQUESTS

111. Please provide color copies of all available historic USGS topographic maps that cover the entire project area and vicinity. Copies reduced in size are acceptable, as long as printed information on the maps is legible. Please ensure that the mode of reproduction yields copies with sharp details. Include electronic copies of the maps, where available.

Response: The above maps are included in this submittal as Attachment DR111-1. The 1955 *Roach Lake, California* 15' USGS quad does not cover the project footprint; rather this map was reviewed for information regarding local mines and roads in the project vicinity. The review of the 1939 *General Highway Map, Nye County, Nevada* includes only Sheet 6. The following maps were also reviewed for this project and are also included in Attachment DR111-1:

- 1919 *Road Map of the State of Nevada*, State of Nevada, Department of Highways
- 1952 *Clark County, Nevada*, State of Nevada, Department of Highways, Sheet 1
- 1968 *Clark County, Nevada*, State of Nevada, Department of Highways, Sheet 1
- 1963/1968 *Nevada State Highway Department, Planning Survey Division Quadrangle 12-4, Clark and Nye Counties*
- 1956 *Horse Thief Springs, California and Nevada* 15' USGS quadrangle topographic map
- 1960 Kingman, Arizona 1:250,000 USGS quadrangle topographic map
- 1969 Las Vegas, Nevada 1:250,000 USGS quadrangle topographic map
- February 1954 Aerial
- September 1968 Aerial

112. Please provide the four maps in the AFC Appendix 5.3E-2 on one 11" x 17" overview map for reference purposes.

Response: This overview map is provided as Confidential Figure DR112-1.

EFFORTS TO IDENTIFY CULTURAL RESOURCES

Efforts to Identify Archaeological Resources

BACKGROUND

Resource data provided in the AFC and Supplement B, Cultural Resources section, is not sufficient for staff to clearly identify and analyze the archaeological deposits and resources in the study area, or understand the prehistoric and historic land use behaviors that the deposits represent. Useful graphic presentation, including appropriate maps, was generally lacking. This information is essential for staff to adequately analyze cultural resources in the project area of analysis and any project-related impacts to those resources.

DATA REQUESTS

113. Please provide a U.S. Geological Survey quadrangle map at a scale of 1:24,000, with separate overlays of prehistoric, historic, ethnographic, and built environment resource locations, depicting the locations of all previously known and newly

identified cultural resources compiled during the course of the applicant's efforts to construct a cultural resources inventory for the proposed project area.

Response: Applicant disagrees that the substantial resource data provided in the AFC, Supplement B, and all technical reports and maps that accompanied those two filings are not sufficient for Staff to clearly identify and analyze the archaeological deposits and resources in the PAA.

Two additional maps are included for this data response, Confidential Figures DR113-1 and DR113-2. One map shows all of the prehistoric resources identified during the pedestrian survey and the other shows all of the historic resources identified during the pedestrian survey. No ethnographic resources were identified within the project area or within the buffer. No historic built environment resource locations were identified within the project area, the 200-foot buffer, or the one-half-mile radius.

114. Please provide the total number of acres surveyed to date for the proposed project, including the project site, temporary construction area(s), common area, and all buffers. Please also provide the total number of acres in the proposed project area and the regulatory buffers that had been subject to previous survey. These figures would allow the calculation of the percentage of the proposed project area that had been subject to survey prior to the recent efforts. Please include the frequency, expressed as a ratio of sites per acre, of archaeological resources found on the previous surveys the reports for which are part of the results of the record search for the project. This figure will afford staff a baseline relative to help assess the recent pedestrian survey.

Response: The total acres surveyed to date is about 3,534 acres. This includes the project site, temporary construction area, the common area, as well as the 200-foot buffer.

A total of 548 acres were previously surveyed by other consultants. Only one resource was identified within the HHSEGS project area and buffer during these previous surveys. Thus, a ratio of sites per acre would be expressed as 1 site per 548 acres, or about 0.002 site/acre.

115. Please review the completeness and accuracy of all DPR 523 form for the archaeological sites in the project area of analysis, correct any absent data or incorrect data, and correct all discrepancies for each resource identified in the cultural resources section of the AFC, original technical report, subsequent Supplements to the AFC, and the DPR 523 forms applicable to this project. Please provide corrected versions of all the DPR forms and a brief summary of the corrections made. Staff found that the DPR 523 forms for the archaeological sites in the project area of analysis often did not correspond well with the descriptions of the resources in the original technical report, the AFC, or subsequent Supplements to the AFC. For example, on the DPR 523 forms for archaeological site S-3, there is an apparent discrepancy where, on the Archaeological Site Record, the site dimensions are given as 15 meters north to south and 15 meters east to west while the Sketch Map depicts the site as measuring roughly four meters square with two flake concentrations and one isolate flake. The texts of both the original technical report and Supplement B to the AFC report a third scenario whereby the site includes six stone flakes and two cores concentrated in a one meter square area. Also, the Sketch Map for site S-4 shows different dimensions than the Archaeological Site Record (ASR) provides, respectively two stone flake concentrations instead of one, and four isolate flakes external to the depicted concentrations instead of the eight

reported on the ASR. The DPR form for site S-20 does not include a Sketch Map at all.

Response: As stated in Applicant's December 27, 2011 letter, an additional 2 weeks has been requested to respond to this data request. Applicant intends to provide a response by January 20, 2012.

116. Please redraft and provide the Sketch Maps for the DPR 523 forms for each archaeological site to more accurately depict the locations of site data; clarify which map symbols depict mapped vegetation, landscape features, and archaeological remains; and more accurately depict components of archaeological deposits, such as flake concentrations. The Sketch Maps provided as part of the DPR 523 forms for each archaeological site do not depict site data (permanent reference points) or use standard professional map symbols that normally would provide relational accuracy of the vegetation, landscape features, and archaeological remains depicted. For example, the use of a stock oval symbol to depict a flake concentration fails to convey relevant dimensional and relational data about the archaeological remains.

Response: As stated in Applicant's December 27, 2011 letter, an additional 2 weeks has been requested to respond to this data request. Applicant intends to provide a response by January 20, 2012.

117. The descriptions of the geomorphic contexts of the archaeological sites in the project area of analysis are not resource-specific and, therefore, of limited use. For example, sites CA-INY-2492, S-2, S-4, S-55 and S-11 are simply said to be in sand alluvium of late Holocene age, and, in the case of S-11, the sand alluvium is equated with Hayne's 1967 Unit G in the Las Vegas Valley. Sites S-3 and S-6 are noted to be on Plio-Pleistocene valley or basin fill, while no geomorphic context at all was provided for sites S-1 and S-23. Please expand, with reference to field observations from the recent pedestrian survey, the geomorphic contexts for each archaeological site in the project area of analysis, and ensure that this information is presented in a consistent manner across the final technical report and the final DPR 523 forms. The geomorphic context for each archaeological site should reference the broader landform or landforms that serve as the host for the archaeological deposits and provide the finer resolution description of what, if any, landform features are part of the resource-specific geomorphology, if broader landform interfaces exist on a site, what the transition zone between the landforms looks like, and describe the surface hydrological regime across the resource.

Response: As stated in Applicant's December 27, 2011 letter, an additional 2 weeks has been requested to respond to this data request. Applicant intends to provide a response by January 20, 2012.

118. Staff has not been able to find an explanation of the temporary archaeological site numbering system anywhere in the documentation that the applicant has submitted to date. Please provide an explanation that would clarify what the letters in the designations stand for, why there are numbering gaps between many of the designated sites, and what the status is of the applicant's application for permanent trinomials.

Response: The field surveys took place between March 21, 2011 and April 1, 2011; May 23, 2011 and May 27, 2011; and June 28, 2011 and June 29, 2011. Different sets of temporary numbers were used for different survey crews as well as for the different surveys to avoid

any possibility of using the same temporary number more than once. For example, Temporary Site Nos. S-1 through S-12 were used for the first survey period. Sites began at Temporary Site No S-20 for a second survey crew, which ran near the end of the first survey period. Temporary Site Nos. that began with S-AF were used for the portion of the survey on BLM land. The "AF" designation corresponds to the initials of the field director for the BLM portion of the survey.

Points were taken for all sites found during the survey and consecutive temporary numbers were assigned. Only one previously recorded site was identified in the survey area. When surveying in this particular area, the survey crew continued to assign temporary numbers to found resources. These locations were reviewed and compared to the previously known resource to identify prior to the recordation phase. The temporary number originally assigned to this resource was then dropped. Further, as part of the quality assurance and quality control process, as recordation was conducted after the survey was complete, the identification of additional artifacts during the recordation phase resulted in the combination of some of the sites. In these cases, the higher temporary number was dropped. Thus, missing numbers are related to sites that were identified as previously recorded or included in other sites due to proximity or additional artifacts identified during the recordation phase.. Isolated finds were similarly numbered. Some isolates were incorporated into sites during the recordation phase, hence accounting for any numbering gaps. Once the site records are finalized, they will be submitted to the Eastern Information Center so that permanent numbers may be assigned.

119. Please provide the DPR 523 forms for data collected on archaeological isolates within the project area. Also, please clarify or correct discrepancies between appendix D of the original technical report, which lists the isolates, and the plots of the isolates in appendix A of that same document.

Response: These forms are provided as Attachment DR119-1 and will be filed under a repeated request for confidential designation.

120. Archaeological site S-2 appears to be a unique resource in the cultural resource inventory for the project area of analysis. The site includes a small, shallow, roughly rectangular pit (130 cm x 57 cm x 17 cm) that was identified on the original site form to be consistent with a roasting pit and on the September 2011 revision to the form to be a mesquite roasting pit. The applicant cites no source nor offers any rationale for ascribing a specific function to this feature. Identification as a mesquite roasting pit is questionable as the pit lies approximately one-third to one-half of a mile from the nearest mesquite tree. Please provide additional discussion and support for the function ascribed to the feature. Staff would further appreciate the discussion to include considerations of other possible functions for the pit, such as a cremation pit, an interpretation that would not be inconsistent with uses of the project area proper that have been expressed by Native Americans during meetings with staff.

Response: Neither the technical report nor the site record for Site S-2 describe S-2 as a "mesquite roasting pit". However, the term "mesquite roasting pit" was mistakenly used in the evaluation statement for Temporary Site S-2 in Supplement B. This statement is corrected in the reviewed DPR forms that were prepared for the Data Response, Set 1D. This feature is nevertheless unique among the survey results; none were found elsewhere in the project area. Temporary Site S-2 will be included in the Phase II investigations and the possible functions of this feature will be further explored in the Research Design for Phase II.121.

121. Staff's analysis of the proposed project's potential to affect significant archaeological resources will reach beyond the identification and evaluation of individual archaeological sites and will consider the potential presence and significance of multi-site resources, such as archaeological districts or landscapes. If staff were to identify any such district or landscape, each individual archaeological site would need to be evaluated in terms of its historical significance as a stand-alone resource and as a potential contributor to a broader, multi-site resource. With this regulatory framework in mind, please provide a discussion of whether there may be prehistoric or historic themes that may be reflected by different subsets of archaeological sites in the project area of analysis. If the applicant comes to the conclusion that any such districts or landscapes exist, please revise the evaluations of the historical significance of those individual sites that may fall into one or more of those broader resources to include consideration of each site's potential to contribute to the historical significance of those broader resources.

Response: The archaeological sites encountered within the PAA (see Figure DR98-1) can be characterized generally as lithic scatters and do not possess distinctive attributes that would allow them to be divided into subsets. Cores and raw source material suggests toolstone procurement as a site activity at one, while another site appears to possess an archaeological feature, and a third site is a prehistoric trail. However, as a rule the sites within the PAA are sparse, and the data are not sufficiently robust to create subsets of sites necessary to constitute an archaeological district or landscape.

The potential presence of a prehistoric trail does not change this analysis, as prehistoric travel through the HHSEGS was already assumed. None of the sites recorded within the HHSEGS contain evidence of habitation and no water is available within the HHSEGS site. Additionally, the review of other habitation sites within the Pahrump Valley indicates that most of the requirements for long term occupation are lacking within the HHSEGS. Thus, given this ephemeral archaeological record, no archaeological districts or landscapes exist within the PAA.

The Applicant is aware of the mesquite-coppice dune – springs, “step-fault” area to the east and outside the PAA in Nevada, and has considered it as it may affect the interpretation of the archaeological record within the PAA. But due to geological factors, this area ends outside the PAA and its buffer (see, for example, Figure DR110-1). There is no evidence in the archaeological record examined to date that would associate the PAA's archaeological sites with that area, such as common groundstone artifacts most likely used in processing plant resources. Therefore, while the region in Nevada may or may not constitute an archaeological landscape, the PAA would not be a part of it, and its archaeological record is physically unassociated with it.

Efforts to Identify Built-environment Resources

BACKGROUND

The AFC does not provide any information on above-ground structures and facilities that may be more than 45 years old, simply stating that no historic architectural standing structures are present in the project area. Additional information is needed for staff to complete their analysis.

DATA REQUESTS

122. Please identify all structures, including nearby residences, more than 45 years old, that are within one-half mile of the project site(s) and from which a major portion of the HHSEGS project will be visible. Please have an architectural historian complete any evaluations, provide copies of completed DPR 523 forms for each resource, and ensure that each form contains a discussion of the significance of the building or structure under CEQA Section 15064.5(a)(3), (A)(B)(C) & (D). For those structures and properties evaluated as eligible, please have the architectural historian evaluate whether the integrity of setting will be significantly impacted by construction of the HHSEGS such that the significance of the resource will be materially impaired.

Response: Reviews of historic maps and aerials, as listed in Data Response 111, did not show any structures located within the project area or within a one-half mile radius of the project before 1968.

In response to this data request and Data Request 123, additional archival research was conducted. A windshield survey of the Calvada Springs subdivision was conducted on December 29, 2011. The purpose of this survey was only to identify which structures were permanent and which were trailers and mobile homes. The majority of the buildings located within a one-half mile radius of the project area are mobile homes. There are two permanent structures that are residences located on Carpenter Avenue, in Township 22 North, Range 10 East, Section 34. These two buildings are located within the original Spring Valley Ranchos subdivision, now called Calvada Springs or Charleston View. Other permanent structures observed included outbuildings, such as barns and sheds. These structures are also located in Section 34. Specific build dates for these two residences or the outbuildings were not found. However, other documents, aside from the original maps and aerials reviewed, indicate that all were constructed after 1968.

Roland H. Wiley acquired the land for the Spring Valley Ranchos in 1959 and began making plans to create a subdivision. Additional information about the history of this subdivision is provided in Data Response 123. Wiley began grading the roads in 1966. Documents filed with the Department of Real Estate of the State of California state that T22N, R10E, Sections 34 and 35 were undeveloped acreage in 1967. All of the above mentioned structures are located in Section 34. Additionally, the review of the 1968 aerial shows that although the roads are clearly visible in 1968, no structures are present. Telephone service was never provided for this development (State of California, 1967) and the small 12.5 kV power line that provides electricity to the community was erected by Wiley after 1967 to entice buyers (Conversation with S. Scow, attorney for The Wiley Family Trust, December 29, 2011).

123. Please provide a detailed history of the project site in the modern period, including the age and history of the existing subdivision and, if older than 45 years, whether it might be a historic resource. Include information regarding whether the subdivision is an overlay on an earlier landscape and what percentage of the site was graded for the existing layout. If it is over 45 years old, have an architectural historian complete the evaluation, provide a completed DPR 523 form for each resource, and ensure that it contains a discussion of the significance of the site under CEQA Section 15064.5(a)(3), (A)(B)(C) & (D).

Response: Additional research into the history of the project area was conducted by CH2M HILL. Information about the HHSEGS project site was obtained from Mr. Steven Scow, the

attorney for The Wiley Family Trust. Mr. Scow also provided information from the recollections of Roland Wiley and Ruth Ellerbeck. Ms. Ellerbeck was involved in the development of the Calvada Springs subdivision. Another source of information was the photo collection at the University of Nevada, Las Vegas, Special Collections.

The land underlying the HHSEGS project site and surrounding area was obtained by Roland Wiley in 1959. He exchanged land in Nevada for additional land in California to connect the discontinuous portions of his ranch and create a continuous tract of land (BLM Land Patents; Conversation with S. Scow, December 28, 2011).

Wiley began making plans to subdivide the land in California by 1961 (Department of Real Estate of the State of California, Summary of Subdivision Application, 1967). Wiley named the subdivision the Spring Valley Ranchos and began trying to sell lots. Roads were marked off of the previously undeveloped land and a few lots were sold (Temple, 2008). Wiley, who owned two graders, began the road grading. The land was divided into 2.5 and 20 acre parcels. Several roads were graded to provide access to each of these parcels. When Wiley finished the road grading, he had graded less than 10 percent of the land. In 1963, electricity came to Pahrump. Wiley decided that his lots also needed electricity. He worked to install a small 12.5 kV transmission line that ran partially in California, crossing the state border and tying into the fledging electric service in Pahrump (McCracken, 1992; Conversation with S. Scow, December 29, 2011). That same year, the Hidden Springs Water District was created to bring water to the planned subdivision (Inyo County Staff Report on Dissolution 2011-01, Hidden Springs Water District, April 11, 2011). Lines were never dug and the Hidden Springs Water District appears to consist solely of two large water tanks located north of the Tecopa Highway. Telephone lines were never planned for the subdivision (Department of Real Estate of the State of California, Summary of Subdivision Application, 1967). Both a road which closely follows the present day Tecopa Road and the roads for the Spring Valley Ranchos subdivision are visible on aerials of the area from 1968.

In 1969, Wiley sold most of the 2.5 acre lots to Preferred Equities. The lots did not sell particularly quickly and the deed was returned to Wiley in lieu of foreclosure in 1974 (Purchase Agreement and Escrow Instructions, 1969; Conversation with S. Scow, December 29, 2011). In 1979, much of the land underlying the HHSEGS project site was sold to Kenneth Cox. Cox wanted to create plots to sell for agricultural use. Specifically, Cox wanted to grow alfalfa, cotton, and pistachio nut trees (Letter from Wiley to Jack Clay, Inyo County Assessor, 1-31-83). Cox drilled a number of wells during his ownership of the property. The property was returned to Wiley in foreclosure in 1984.

The Hidden Springs Water District provided water to the small community from 1967 to 1982, when the California Department of Health Services noted high levels of bacteria in the water due to defects in the overall system. In 1969, Wiley sold most of the 2.5 acre lots to Preferred Equities. The lots did not sell particularly quickly and the deed was returned to Wiley in lieu of foreclosure in 1974 (Purchase Agreement and Escrow Instructions, 1969; Conversation with S. Scow, December 29, 2011).

The small community of Calvada Springs is now better known to many locals as Charleston View (Temple, 2008). The small collection of residences has no utility services, save the electricity provided by the transmission line that runs into Pahrump. Water service ceased in 1983; the Hidden Springs Water District was formally dissolved by Inyo County in 2011. A

public pay phone was removed from the area in 2007 due to vandalism (Temple, 2008). The majority of the living quarters in the community are mobile homes and trailers.

References

McCracken, Robert D. 1992. A History of Pahrump, Nevada. Nye County Press

Temple, Robert. 2008. Edge Effects, The Border Name Places. iUniverse, United States.

BACKGROUND

The Old Spanish Trail/Mormon Road was a well-travelled trade route through the area and portions of it have been listed on the National Register of Historic Places. The Tecopa Chapter of the Old Spanish Trail Association has identified and recorded portions of the trail still extant in the Mojave Desert, including in the project vicinity. While the segment adjacent to the project area is not listed as a contributing element to the National Register-listed Old Spanish Trail/Mormon Road Historic District, this segment and other extant segments in the project area of analysis may have significance at the local or state level and may then be considered historical resources for the purposes of CEQA. If impacted by the project, mitigation may be required.

The technical report and Supplement B also acknowledge the presence of a number of other roads and trails potentially located within the project area of analysis, such as the wagon road connecting Hidden Hills Ranch with Trout Canyon. It does not appear that these resources have been evaluated and, if within the project area of analysis, need to be surveyed, recorded and evaluated for their significance as historical resources pursuant to CEQA.

DATA REQUESTS

124. Please provide a map, at no less than a 1:24,000 scale, showing all of the roads and trails/segments within the project area of analysis, regardless of age. Identify the name and ages of the trails and roads to the extent possible. Consult with the Tecopa Chapter of the Old Spanish Trail Association to ensure all segments of the Old Spanish Trail within the project area of analysis are identified on the map.

Response: A map has been provided as Confidential Figure DR124-1 that includes all of the roads within the HHSEGS project area. Names and dates of these roads have been included. Dates were obtained from the maps reviewed for Data Response 111 and as well as from the archival research conducted for Data Response 122 and Data Response 123.

125. Present a complete history of the Old Spanish Trail. Describe, to the extent possible, how the trail was used in prehistoric times. The Paiute referred to the trail as the Indian Trail during the August 2, 2011 meeting. Please describe any cultural significance the trail plays in the history of the Paiute or other Native American groups in the area. Additionally, the history of the trail in the AFC stops at year 1863. Please complete and provide a description of the history of the trail. If any additional trail segments are present within the project area of analysis, provide a completed DPR 523 form for each resource, prepared by the appropriate resource specialist, and ensure that each form contains a discussion of the significance of the segment, both individually and as part of a potential district, under CEQA Section 15064.5(a)(3), (A)(B)(C) & (D). For those segments evaluated as eligible, please have the appropriate specialist provide an evaluation of whether the integrity of

setting will be significantly impacted by construction of the HHSEGS such that the significance of the resource will be materially impaired.

Response: In Applicant's December 27, 2011 letter, the Applicant objected to this data request because sufficient information on this topic has already been provided, this data request is burdensome and the information requested is not reasonably necessary for the Commission decision in this proceeding. Without waiving this objection, Applicant provides the following response.

The discussion of the Old Spanish Trail and Mormon Road (OST-MR) that was included in the original AFC submittal includes mention of aboriginal use of the trail and ends with mention of trail use into the 1940s. Additionally, the historic section contains references to the OST-MR as appropriate to discuss the history of the HHSEGS project area and vicinity. The archival research, remote sensing analysis, and pedestrian survey did not identify any portion of the OST-MR to be located within the HHSEGS project area. Additionally, although the OST-MR is formally recorded on the Nevada side of the border, the site record states that the trail has no physical manifestation on the Nevada side. Finally, there is no formally recorded portion of the OST-MR on the California side and no permanent Primary number has been assigned to the trail at the location south of the HHSEGS project area. A complete history of this trail has been provided and further information is considered excessive and unnecessary to the determination of the potential effect of the HHSEGS project on historical resources and historic properties.

However, since the OST-MR is important to the history of the area, additional information about the history of the Old Spanish Trail-Mormon Road is included below.

Old Spanish Trail-Mormon Road

Early Exploration. The Old Spanish Trail is a network of Native American and European trade routes that ran from Santa Fe, New Mexico, through Colorado, Utah, Arizona, Nevada, and into Los Angeles, California. The first travelers on this trail were likely the Utes, Paiutes, Mojave, and other Native American groups who would have employed this route for trade and travel throughout the Southwest. "The Southern Paiute call the Old Spanish Trail, the Paiute Trail, and believe it was in use even before them " (Seymour, 2011). It was also used by the Anasazi as a route from the Virgin River area to the turquoise mines in the Kingston Range, about 25 miles (40 km) to the northwest. Without the native people's knowledge of these pre-contact trails and resources such as potable water sources and springs, it is unlikely that early European explorers would have survived in the harsh environment of the Pahrump Valley. Unfortunately, little ethnographic data on specific trade and travel routes is available.

As early as the 1500s well into the 1800s European colonial powers sought to keep a presence in North America, most particularly in the West to control the resources. Spain wanted reliable trade and travel networks that its colonies in New Mexico to its holdings in Alta California. In 1776, Padre Francisco Garcés traveled and described a portion of the Old Spanish Trail, making his way from Sonora, Mexico to Los Angeles. The Old Spanish Trail was not traversed in its entirety until 1829 when Antonio Armijo was dispatched by the Governor of New Mexico to complete the exploration begun by Padre Francisco Garcés. He led a group of 60 men from Abiquiu, New Mexico, leaving on November 8, 1829, and arriving at the mission at San Gabriel, California on February 3, 1831 with woolen goods to

trade for horses. Thus, began the commercial use of the Old Spanish Trail. The trail also served as a route for emigration, the movement of slaves, and most famously, for the movement of stolen horses (Warren 1974, Hafen and Hafen 1954). In the early 1800s, horses could be purchased for 10 dollars in California and sold for 50 dollars in Santa Fe (McCracken, 1992).

Jedidiah Strong Smith was the first American to travel the trail to California from the east in 1827. He also recorded the geology of the Great Basin and the Rocky Mountains while traveling the trail (Hafen and Hafen 1954). The first party to travel over the Old Spanish Trail's Northern Route was a trapping party lead by William Wolfskill and George C. Yount in 1830-1831 (NPS 2001). Wolfskill and Yount's party of around 20 men left Abiquiu, New Mexico late in 1830, crossed the Colorado River, and headed southwest through Utah. They rejoined the Colorado River and passed through the Mojave Desert west into California. For the next several years, trappers, mule traders, and settlers traveled in wagons, on horseback or by foot over this Northern Route (NPS, 2001).

The Fremont Expedition. In 1844, John C. Fremont led an expedition to explore the Great Basin. He was accompanied by a party of experienced mountain men with the U.S. Topographic Engineers. The Fremont party camped at Stump Springs, Nevada, in late April, 1844, arriving in Las Vegas on May 3. From Las Vegas, the Fremont party crossed the Muddy River, where they encountered a small group of Paiute, and traveled on to the Virgin River. They followed the river to the border of Arizona, and started following the "Spanish Trail" on the other side. Fremont's expedition was the first to make scientific observations about the topography and the environment of the Great Basin. Fremont also used the name "The Spanish Trail" in his writings for the trail he had followed. These writings were widely distributed and the name stuck (NPS 2001).

The Mormon Road

The first passage of the Old Spanish Trail by a Mormon party occurred in 1848 when a small group was dispatched to California to purchase seed. This group reached Los Angeles via Las Vegas and returned to Utah safely (Warren 1974). With this success, Mormon missionaries began to use the Old Spanish Trail to gain access to southern California for supplies. Mormon missions were established along the way, facilitating use of the route by other Mormons. This route was used so often by Mormon emigrants and missionaries that it was renamed the Mormon Road (Warren 1974, NPS 2001).

From the vicinity of Goodsprings in Nevada, one variant of the route crossed through the Ivanpah Valley to Mountain Pass, and then on to Soda Springs before connecting with the Mojave River in the vicinity of present-day Barstow. This portion of the trail was heavily used by Mormon settlers and other emigrants to travel between Salt Lake City and Los Angeles from the 1850s until the early 1900s. Near the HHSEGS, the trail was used by the residents of the Pahrump Valley to access the highway that ran from Las Vegas and Los Angeles. Although not the preferred route for most Pahrump residents, as the trip could take more than 3 hours, it was easier on tires than some of the other routes through Trout Canyon or over the Johnnie Summit. Use of the trail to access the highway declined after 1954 when Highway 160 was completed (McCracken, 1992).

Today modern railroad right-of-ways and state highways essentially follow the Old Spanish Trail-Mormon Road. ". . . modern travelers arriving in Las Vegas from the west and east on

Interstate 15 follow Fremont's basic route to the former location of one of the best springs in the region" (NPS 2001).

References

Hafen, Le Roy R. and Ann W. Hafen. 1954. The Old Spanish Trail. In The Far West and Rockies Historical Series 1820-1875, Volume I. The Arthur Clark Company, Glendale.

McCracken, Robert D. 1992. A History of Pahrump, Nevada. Nye County Press.

National Parks Service. 2001. National Register of Historic Places Registration form for The Old Spanish Trail and Mormon Road Historic District. Washington DC.

Seymour, Greg. 2011. Las Vegas Review-Journal excerpts from The First 100 The Men and Women Who Shaped Las Vegas, Part 1: The Early Years, Stephens Press. Electronic Resource, accessed December 29, 2011, <http://www.1st100.com/part1/fremont.html>.

Warren, Elizabeth von Till. 1974. Armijo 's Trace Revisited: A New Interpretation of the Impact of the Antonio Armijo Route of 1829-1830 on the Development of the Old Spanish Trail, Master's Thesis, Department of History, University of Nevada, Las Vegas.

126. Please identify and provide an evaluation of any other linear resources within the project area of analysis, including trails, wagon roads, highways, transmission lines, telegraph lines, or telephone lines that are 45 years old or older. If any additional linear resources are present within the project area of analysis, provide a completed DPR 523 form for each resource, prepared by the appropriate resource specialist, and ensure that each form contains a discussion of the significance of the linear resource, both individually and as part of a potential district, under CEQA Section 15064.5(a)(3), (A)(B)(C) & (D). For those resources evaluated as eligible, please have the appropriate specialist provide an analysis whether the integrity of setting will be significantly impacted by construction of the HHSEGS such that the significance of the resource will be materially impaired.

Response: No built structures older than 45 years, including electrical lines or telephone lines, were identified within the project area. Please see Data Response 122. Wells present on the HHSEGS project were installed either by Roland Wiley in 1967 or by Kenneth Cox in 1979. Please see Data Response 123.

The HHSEGS is situated north of the segment of the Old Spanish Trail-Mormon Road that runs by Stump Springs. In order to look for the remains of historic roads, including sections of this trail, remote sensing was applied to the HHSEGS project area. The results of this exercise were compared with historic maps of the project. Two historic roads and a single prehistoric trail were identified as crossing the HHSEGS project area. These roads were recorded on the appropriate DPR forms, including a Primary form, a Linear Feature Form, and a Location Map. These forms are included as Confidential Attachment DR126-1. No other linear resources were identified from the remote sensing, the archival research, or during the pedestrian survey.

The two historic roads run through the eastern end of the HHSEGS project. These two roads join north of the project area near the now defunct Hidden Hills Airport and continue to the Hidden Hills Ranch main building. The small single trail appears to have been a footpath,

most likely a prehistoric path. This trail runs northeast-southwest in very fragmented sections.

Temporary Site S-24 consists of a historic road segment connecting the old Nevada State Route 16 to the Tecopa Pass Road. It measures approximately 8,250 feet in length and is approximately 20 feet wide. This road is depicted on the 1910 USGS 30-minute Ivanpah map and the 1956 USGS 15-minute Horse Thief Springs quadrangle map. This road also appears to be the road discussed in archival sources that led into and out of the Hidden Hills Ranch in the 1930s. Its construction consists of a shallow grade in the natural landform. The road was used to access the ranch from the road between Las Vegas and Los Angeles via Sandy Valley prior to the construction of Nevada Highway 160. It was also used by other local Pahrump residents, albeit not as frequently. The road, while kinder to tires, was a much longer route into Las Vegas than other routes for residents of ranches other than Hidden Ranch, later Hidden Hills Ranch. According to a local informant, Wiley regularly graded the roadway as he was its primary user. The 1910 Ivanpah map shows that the road crosses the Old Spanish Trail-Mormon Road when it turns southwest, approximately one-half of a mile south of the HHSEGS project area.

The CRHR and NRHP criteria of evaluation were applied to the recorded segment of Temporary Site S-24, and it is recommended that this segment is not eligible for listing on the CRHR or the NRHP under any of the criteria. Additionally, the road lacks integrity.

The segment of road located within the HHSEGS has retained its integrity of location and design. The road was originally used by residents in the Pahrump Valley to access the highway between Las Vegas and Los Angeles via Sandy Valley. This road is no longer used in the same manner. Thus, the road has lost its integrity of association. Mr. Wiley, who owned the first motorized grader in the Pahrump Valley maintained this road for many years. In the late 1960s, Wiley acquired a modern Caterpillar grader and began maintaining the roads on his property with this much larger machine. Thus, many of the older roads on his property were widened. Thus, this road also appears to have lost much of its integrity of original workmanship.

Temporary Site S-24 was originally one route into and out of the Pahrump Valley. However, it was not the most popular route, as the trip to Las Vegas from the Pahrump Ranch via this road took almost 3.5 hours. Other routes, including the most frequently used route over Johnnie Summit, were more popular with the majority of residents in Pahrump (McCracken, 1992). This road was not particularly important to the development of the Pahrump Valley. Thus, this road is not considered eligible for the CRHR under Criterion 1 or the NRHP under Criterion A. Although Roland Wiley is a figure important to local history and this road was used by Wiley, the road was in use before he acquired the Hidden Ranch. The road is also not specifically related to the development of the Hidden Ranch, later called the Hidden Hills Ranch. Thus, this road does not appear to be eligible for the NRHP under Criterion B or the CRHR under Criterion 2.

Temporary Site S-24 is a simple dirt road that does not exhibit distinct characteristics of a type, period, or method of construction. Additionally, the integrity of this road has been impacted and no longer reflects its original period of construction. Dirt roads such as this one are common and numerous throughout California and Temporary Site S-24 does not exhibit a unique method of construction. Therefore, the road is not eligible for listing under Criterion C of the NRHP or Criterion 3 of the CRHR. Finally, this road segment has little

potential to provide additional information about the history of the area; therefore, the road is not eligible for the NRHP under Criterion D or the CRHR under Criterion 4.

Temporary Site S-25 connects the historic Hidden Hills Ranch to Sandy Valley. The segment recorded within the HHSEGS measures 4,025 feet in length and is 20 feet wide. Its construction consists of a shallow grade in the natural landform. This road is visible on the 1956 USGS 15-minute Horse Thief Springs quadrangle map. As the road does not appear on the 1910, 1912, and 1942 USGS Ivanpah 30-minute quadrangle map, but does appear on the 1956 15-minute Horse Thief Springs USGS quadrangle map, a construction date range of 1954 to 1956 is appropriate. It is likely that Wiley graded this road, as it connects to a previous older road on his property. This resource has been affected by grading, wind and water erosion over the last 50 years.

The CRHR and NRHP criteria of evaluation were applied to the recorded segment of Temporary Site S-25 and it is recommended that this segment is not eligible for listing on the CRHR or the NRHP under any of the criteria. Although this road could potentially be considered eligible for listing under Criterion B of the NRHP or Criterion 2 of the CRHR due to its relation with Roland Wiley, a locally important figure, the road does not retain enough integrity for listing.

The segment of road located within the HHSEGS has retained its integrity of location and design. The road appears to have been originally graded by the owner of the Hidden Hills Ranch, Roland Wiley. Wiley appears to have used the road to access his property on the California side of the border. Wiley originally ran cattle on the property. This road is no longer used in the same manner. Thus, the road has lost its integrity of association. In the late 1960s, Wiley acquired a modern Caterpillar grader and began maintaining the roads on his property with this much larger machine. Thus, many of the older roads on his property were widened. Thus, this road also appears to have lost much of its integrity of original workmanship.

Temporary Site S-25 appears to have been one of many dirt access roads on the Hidden Hills Ranch and does not appear to be particularly important to the development of the Pahrump Valley. Thus, this road is not considered eligible for the CRHR under Criterion 1 or the NRHP under Criterion A. Roland Wiley is a figure important to local history and this road was likely constructed by Wiley, thus, this road could be considered eligible for the NRHP under Criterion B or the CRHR under Criterion 2, if the road retained integrity.

Temporary Site S-25 is a simple dirt road that does not exhibit distinct characteristics of a type, period, or method of construction. Additionally, the integrity of this road has been impacted and no longer reflects its original period of construction. Dirt roads such as this one are common and numerous throughout California and Temporary Site S-24 does not exhibit a unique method of construction. Therefore, the road is not eligible for listing under Criterion C of the NRHP or Criterion 3 of the CRHR. Finally, this road segment has little potential to provide additional information about the history of the area; therefore, the road is not eligible for the NRHP under Criterion D or the CRHR under Criterion 4.

Temporary Site S-26 is a single, ephemeral trail or footpath that measures approximately 35 to 40 cm wide. This trail runs northeast-southwest. The trail was not found any historic maps reviewed. See DR 111 for a complete list of maps reviewed. The trail is visible on the ground in two fragmented segments within the HHSEGS project. The northeast segment is

approximately 1.2 km long and the southwest segment is approximately 0.7 km long. The northeastern segment has been impacted by OHV use (dirt bikes), as well as erosion. It is, however, occasionally visible in fair condition. The southwest segment is located in an area within a large, very shallow wash and small, higher areas with desert pavement. The portions of the trail situated on this desert pavement are relatively intact. The trail is not visible between the northeast and southwest segments likely due to erosion of the intervening segment. Overall, the trail is also very heavily impacted anywhere it crosses any of the dirt roads which were graded in the late 1960s when the property was subdivided. At each point where the trail crosses these roads, the trail is obliterated and is not visible again for 3 to 4 meters on either side of the road.

One possible interpretation of this feature is that it could represent a footpath, possibly dating to prehistoric times, from the springs at Hidden Hills Ranch or possibly from Browns Spring to the Tecopa Pass. A few miles to the northwest of Tecopa Pass, near Tecopa, was the location of a Southern Paiute village called Yaga. Yaga had about 70 residents and was the largest village in the region (Ligenfelter 1988, NPS 2001). It is also possible that this road connected this village and the springs north of the project. On the northeastern end of the trail, a small number of isolated finds, all single flakes and Temporary Site S-23, a small lithic scatter, were recorded within 100 meters of this trail. Temporary Resource numbers are located as follows: IF-9, which consists of 1 flake, is located 46 meters southeast of the trail; IF-34, which consists of 1 flake, is located 24 meters northwest of the trail; IF-35, which consists of 1 flake, is located 110 meters northwest of the trail; S-23, which consists of 9 flakes, is located 75 meters northwest of the trail. This lithic scatter, S-23, is not considered eligible for listing on the CRHR or the NRHP. No artifacts were identified along the southwestern segment. None of these resources or the trail itself indicates any specific time period or association with either the village or any of the other known sites in the area. Notwithstanding this possible interpretation, the age and use of this trail is unknown.

The CRHR and NRHP criteria of evaluation were applied to the recorded segment of Temporary Site S-26 and it is recommended that these segments lack integrity and are not eligible for listing on the CRHR or the NRHP.

Several segments of this trail within the HHSEGS were recorded. These segments are discontinuous and there are several portions of this road that are heavily impacted by modern activities. Overall, this trail has not retained integrity of location, design, materials, or workmanship. There are a small number of isolated finds and one lithic scatter identified near the trail that are could be interpreted as being related to prehistoric use. However, none of these artifacts are diagnostic and none represent unique archaeological resources or resources eligible for listing on the NRHP or the CRHR. Due to the nature of the sites in the HHSEGS area, which lack any data indicating habitation, the presence of springs to the north and east of the site, and knowledge of habitation sites in the Pahrump Valley, prehistoric travel through the HHSEGS was already assumed and thus, the recordation of the trail and it's possible interpretation as a prehistoric footpath would confirm this original hypothesis. The trail however, does not appear to offer any additional information that is important to the development of the Pahrump Valley beyond its recordation. Thus, this road is not considered eligible for the CRHR under Criterion 1 or the NRHP under Criterion A. This trail is not known to be related to any specific person important to local prehistory and thus, this road is not considered eligible for the NRHP under Criterion B or the CRHR under Criterion 2. This trail does not exhibit distinct characteristics of a type, period, or method of

construction. Therefore, the trail is not eligible for listing under Criterion C of the NRHP or Criterion 3 of the CRHR. Additionally, due to the lack of diagnostic artifacts along the trail segments, the segments have little potential to provide additional information about the prehistory of the area; therefore, the road is not eligible for the NRHP under Criterion D or the CRHR under Criterion 4.

EFFORTS TO EVALUATE THE HISTORICAL SIGNIFICANCE OF CULTURAL RESOURCES

Evaluation of the Historical Significance of Archaeological Resources

BACKGROUND

A key aspect of the cultural resources analysis for any proposed project is the need for staff to determine which of the cultural resources that are known or found to be in a project area of analysis are of historical significance and would, therefore, warrant further consideration under CEQA. There are a number of the archaeological sites that the applicant found as a result of the pedestrian survey of the project area that staff can agree are not of historical significance on the basis of surface observations alone. There is, however, a subset of sites that surface observations alone are not sufficient to support a determination of historical significance. This latter subset requires further field investigation to document the character and the integrity of the data sets present in each site, and to then derive informed assessments of the historical significance of those data sets.

DATA REQUESTS

127. Please prepare and provide, for staff's review and approval, research designs and work plans for field investigations that are to support the evaluations of the historical significance of archaeological sites CA-INY-2492, S-2, S-4, S-6, S-10, S-11, S-23, and S-AF-1. Staff envisions the designs and work plans as one integrated document.

Response: In Applicant's December 27, 2011 letter, Applicant agreed that sites S-2 and S-10 required additional evaluation to determine the potential historical significance of these sites, but objected to preparing a research design for sites not eligible for listing on the CRHR or the NRHP. As stated in the letter, without waiving this objection, Applicant intends to provide a response to this data request by February 6, 2012.

128. Once the research designs and work plans have been approved, please execute the approved investigations and provide a summary report of the total field investigation effort and reasoned arguments on the historical significance of the subject archaeological sites that explicitly reference the new data from the field investigations.

Response: Once the research design is approved for Temporary Sites S-2 and S-10, the field efforts and subsequent report phase will be implemented.

Evaluation of the Historical Significance of Ethnographic Resources

BACKGROUND

As discussed in Data Adequacy, the prefilming meeting held on August 2, 2011 with the local Native American groups, specifically the Pahrump Band of Paiute and Las Vegas Paiute, clearly indicated a spiritual connection with the Pahrump Valley and the project site. The tribal members present indicated that different bands of Paiute have traditionally utilized the

area, and the AFC indicates other groups were also utilizing the area. The summary of the ethnography of the Pahrump Valley included in the AFC and Supplement B provides an introduction into the general ethnography of the Pahrump Valley. A detailed ethnographic discussion of the use of the Pahrump Valley by the Southern Paiute and Panamint Shoshone groups is needed for staff to understand and determine the potential significance of places within the project area of analysis to the local Paiute groups, and identify any impacts the project may have on those cultural values.

DATA REQUESTS

129. Please provide a detailed discussion of the ethnography of the Southern Paiute and Panamint groups in relation to the project area of analysis.

Response: In Applicant's December 27, 2011 letter, the Applicant objected to this data request as having already been addressed in AFC Supplement B. The information provided in these two discussions provides both ethnographical data for the Southern Paiute and the Panamint Shoshone, as well as a context for the archaeology found in the Pahrump Valley. Additional information would require substantial additional research and analysis and is not reasonably necessary for the Commission decision in this proceeding.

130. Please provide a detailed description of how the Southern Paiute and Panamint groups utilized the project area of analysis. Describe how the two (or more) groups may have interrelated; what resources were being utilized and how that use is manifested in the archaeological record.

Response: In Applicant's December 27, 2011 letter, the Applicant objected to this data request as having already been addressed in the AFC and its Supplement B. Supplement B expands on the original AFC submittal and provides information about how the Southern Paiute and the Panamint Shoshone likely used the area within the Pahrump Valley. Any further "detailed description" is not reasonably necessary for the Commission decision in this proceeding.

131. Please provide a detailed discussion of the religious or spiritual significance of the project area of analysis and Pahrump Valley to the various peoples using it. Identify the various land forms described in the songs described in Supplement B in relation to the project area of analysis, their significance to the Paiute or other Native American groups and how they might be impacted by the project. Identify any areas outside of the project footprint that are or may have been sacred to Native American groups that the project may have a visual affect on, including Mount Charleston and the Spring Mountains to the east and the Nopah Range to west. Discuss the significance of the viewshed(s) and impact of towers on the viewshed(s), from a Native American cultural perspective. Discuss whether a cultural landscape or traditional cultural property is present and, if so, whether it would be a historical resource for the purposes of CEQA. Provide a completed DPR 523 form for each resource and ensure that the form contains a discussion of the significance of the resource, both individually and as part of a potential district, under CEQA Section 15064.5(a)(3), (A)(B)(C) & (D) prepared by the appropriate resource specialist. For those segments evaluated as eligible, please have the appropriate specialist evaluate and provide a discussion of whether the integrity will be significantly impacted by construction of the HHSEGS such that the significance of the resource will be materially impaired.

Response: In Applicant's December 27, 2011 letter, the Applicant objected to this data request as having already been addressed in the AFC and its Supplement B. Supplement B expands on

the original AFC submittal and the significance of the Pahrump Valley to native populations. Any further “detailed description” is not reasonably necessary for the Commission decision in this proceeding.

132. The Pahrump Paiute members present at the August 2, 2011 meeting described cremation and burial activity within the project area of analysis. Please provide a discussion of the local Native American traditions for the disposal of the dead and the physical remains that might be found as a result. If any indications of this activity are present within the project area of analysis, describe the impact the project may have on these sites or activities and how to best avoid impacting these sites. Please provide a completed DPR 523 form for each resource and ensure that each form contains a discussion of the significance of the resource under CEQA Section 15064.5(a)(3), (A)(B)(C) & (D). For those resources evaluated as eligible, please evaluate whether the integrity of setting will be significantly impacted by construction of the HHSEGS such that the significance of the resource will be materially impaired.

Response: No cremation sites or sites used for burial activity were found at the HHSEGS project area during the pedestrian survey. Temporary Site No. S-2, which has the remains of a roasting pit, is the only site that could potentially reflect the activities described above. Site S-2 will be included in the Phase II investigations and the possible functions of this feature will be further explored in the Research Design for Phase II.

Evaluation of the Historical Significance of Built-Environment Resources

BACKGROUND

In addition to Stump Spring, Supplement B discusses a number of other springs in the general project vicinity, including Mound Spring, Manse Spring, and Bolling Mound Spring. Both Stump Spring and Mound Spring are noted to have had historic-period adobe structures adjacent to them that may have been stations along the Old Spanish Trail, and possibly associated with ranching activity. The likely availability of water and structural remains would indicate some level of occupation at these sites or in general proximity to them. Additionally, the Paiute and Panamint are known to have practiced some limited agriculture and evidence of their use of these sites in the pre-historic and historic eras has been documented. Such resources could be eligible for their association with the Old Spanish Trail and the settlement of the Mojave Desert and project area under criterion A, individually and collectively.

DATA REQUESTS

133. Please provide a map showing the location of all known springs in the project area of analysis. This information may be included on, or as an overlay to, another of the requested maps; a separate map is not required.

Response: There are no springs or any evidence of shallow groundwater within the PAA. The closest springs and known groundwater discharge areas are identified in Figure DR110-1.

134. Please provide a detailed discussion regarding the potential for agricultural activities in the project area of analysis. Describe and record any physical evidence, such as irrigation works or ditches that would indicate the presence of agricultural activity. If such works are present, provide a completed DPR 523 form for each resource and ensure that each form contains a discussion of the significance of the resource under CEQA Section 15064.5(a)(3), (A)(B)(C) & (D), both as individual resources and as a

thematic or discontinuous district, prepared by the appropriate resource specialist. For those properties evaluated as eligible, please have the appropriate specialist evaluate and provide a discussion of whether the integrity of setting will be significantly impacted by construction of the HHSEGS such that the significance of the resource will be materially impaired.

Response: In the PAA and larger arid region farming is not possible in the absence of a source of reliable irrigation water. Seasonal rains may be sufficient to grow corn and other crops on the semi-arid Colorado Plateau, where monsoons are predictable. But that is not possible in the arid Mojave Desert, and historically Southern Paiute agricultural practices were focused on “truck gardens” tethered to artesian spring outflow. Away from the perennial rivers such as the Virgin and Muddy rivers, these valley-bottom springs were the only reliable source of irrigation water during the growing season. Therefore, only areas downstream from historically active spring discharge areas would be expected to possess evidence of former agricultural activities. These are limited in the Project Area of Analysis (Figure DR98-1) to the drainage downstream of Hidden Hills Ranch Spring (Figure DR110-1). Other drainages that are downstream of spring discharge areas, such as Browns Spring and Stump Spring, do not cross the PAA (Figure DR110-1). And, indeed, there is an area of denser annual vegetation where the wash from Hidden Hills Spring debouches onto the floor of the bolson (Figure DR134-1) suggesting wetter subsurface conditions.

Evidence of agricultural practices in association with point-source irrigation water includes check dams and weirs constructed of native stone, diversion canals excavated in the alluvium, and patterned ground associated with tillage and other surface cultivation practices. Some of these features would be visible principally through remote imagery, some during pedestrian survey (e.g. Waters, 1992, pp. 170-179). In the PAA, including the silt-rich area noted in Figure DR134-1, no modifications to the drainages were noted other than recently bladed roads. Nor were any archaeological materials, including isolates, found in the vicinity of this area (Figure DR113-1). This negative finding is consistent with expectations in this part of the Mojave Desert. Irrigation-based truck farming took place closer to the spring discharge areas themselves, well-removed from the PAA.

Reference

Waters, M. R. 1992. *Principals of Geoarchaeology: A North American Perspective*. The University of Arizona Press, Tucson.

Waste Management (135)

BACKGROUND

The Hidden Hills AFC (Section 5.14-8) states that during construction there will be a combination of hazardous and nonhazardous materials (both solid and liquid) that will be generated. The AFC summarizes the removal and proper disposal of these waste streams by means that include collection at satellite accumulation containers near the points of generation; daily waste removal to a contractor's waste storage area located in the construction laydown area; and, periodic 90-day removal and transportation of accumulated waste to an authorized hazardous waste management facility.

DATA REQUEST

135. Given the proposed project's proximity to Nevada, and the absence of hazardous waste collection facilities in California, please provide specific details on the Applicant's plans for nonhazardous and hazardous wastes that potentially would be generated at the facility as summarized in both Table 5.14-2 (construction phase) and Table 5.14-3 (operation phase). Please fully discuss:
- a. Disposal of nonhazardous materials, including the type and volume of waste expected to be generated (provide responses for both the construction phase and the operation phase), the facility that will receive the waste, its location, its current level (volume) of use, and its expected annual use on a cumulative basis (i.e. overall use by other existing and reasonably foreseeable facilities and projects in California and Nevada).
 - b. Disposal of hazardous materials, including the type and volume of waste expected to be generated (provide responses for both the construction phase and the operation phase), the facility that will receive the waste, its location, its current level (volume) of use, and its expected annual use on a cumulative basis (i.e. overall use by other existing and reasonably foreseeable facilities and projects in California and Nevada).

Response: Tables 5.14-2 and 5.14-3 in the Application for Certification (AFC) provide information on the types and volumes of wastes to be generated during the construction and operation phases of the project. The tables also indicate whether the waste is hazardous and how it will be disposed of (i.e., recycled vs. landfilled). At this time it cannot be determined exactly which disposal or recycling facilities will be used for waste disposal from the HHSEGS project because contracts have not yet been established with construction contractors and waste hauling and disposal companies. Furthermore, operation of the facility is not anticipated to begin until 2015 so the disposal locations for waste from operations have not yet been finalized.

To provide enough information to evaluate the potential impacts of the HHSEGS project, a range of waste disposal options has been explored and possible disposal facilities were identified in the AFC. In addition, the options described in the AFC have been updated and refined in response to this data request.

The table below from the AFC, Table 5.14-4R1, has been revised to provide an expanded and updated list of potential hazardous and non-hazardous waste disposal facilities that may be available for use by the HHSEGS project. The Tecopa Landfill is no longer open to the public for waste disposal and has been removed from the table (Hamilton, 2012). The Apex Regional Landfill as well as the Sloan Transfer Station near Las Vegas, Nevada have been retained as possible options for non-hazardous waste disposal. Additional nonhazardous waste disposal sites have been added to the table, and the potential hazardous waste disposal sites described in the text of AFC section 5.14.4.2.2 have also been added to the table.

Although the hazardous waste disposal facilities in the table include mainly landfill-based disposal facilities such as US Ecology in Beatty, Nevada and Kettleman Hills in California, there are other possible options, including waste oil recycling facilities in Las Vegas, which will be explored when operation starts.

The Pahrump Valley Landfill, owned by Nye County, Nevada and operated by Southwestern Environmental Services and the Laughlin Landfill near Laughlin, Nevada, operated by Republic Services, have been added to the table as potential disposal facilities for nonhazardous waste. The Pahrump Valley Landfill is closest to the project site. The Laughlin Landfill is some distance away, so would likely only be used if the Pahrump Valley and Apex landfills were not available. The Laughlin Landfill is approximately 3.5 hours from the project site.

No landfills or transfers stations have been identified within California that currently provide waste pickup and disposal service to the project area. Inyo County operates three landfills, but none closer than about 4 hours from the project site can accept commercial waste. In addition, Inyo County has landfills in Shoshone and Tecopa, but they are not open to the public (Hamilton, 2012). Burrtec Waste Industries currently provides hauling and disposal services in San Bernardino County, but does not provide service to Inyo County (Harrison, 2012).

TABLE 5.14-4R1
Non-Hazardous and Hazardous Waste Disposal Facilities in the Vicinity of the HHSEGS Site

Landfill/ MRF/ Transfer Station	Location	Permitted Capacity (cubic yards)	Remaining Capacity (cubic yards)	Permitted Throughput (tons per day)	Estimated Closure Date	Enforcement Actions Taken
Non-Hazardous Waste Facilities						
Republic Services Sloan Transfer Station ^a	Clark County, NV (Outside of Sloan, NV)	No Cap	No Cap	No Cap	NA	None
Apex Regional Landfill	Clark County, NV (Outside of Las Vegas, NV)	5,967,744	4,840,019	No Cap	1/1/2175	None
Laughlin Landfill	Clark County, NV	NA	NA	No Cap	NA	None

TABLE 5.14-4R1

Non-Hazardous and Hazardous Waste Disposal Facilities in the Vicinity of the HHSEGS Site

Landfill/ MRF/ Transfer Station	Location	Permitted Capacity (cubic yards)	Remaining Capacity (cubic yards)	Permitted Throughput (tons per day)	Estimated Closure Date	Enforcement Actions Taken
Pahrump Valley Landfill	Nye County, NV	NA	NA	NA	NA	None
Hazardous Waste Facilities						
US Ecology Beatty Landfill	Nye County, NV (100 miles northwest of Las Vegas, NV)	1.66 million	1 million	No Cap	2020	Yes ^d
Chemical Waste Management, Inc. Kettleman Hills Landfill ^b	Kings County, CA	10.7 million	1.5 million	8,000	Approximately 2040 ^e	None
Clean Harbors Buttonwillow Landfill ^b	Kern County, CA	14,293,760	9.2 million ^f	10,482	1/1/2040	Yes ^c

NA: Information is not available at this time

^aNevada information from Southern Nevada Health District Solid Waste and Compliance (SWMA, 2011).^bCalifornia information from CalRecycle Solid Waste Information System Database (SWIS) (CalRecycle, 2011a).^cNo violations in 2007-2011, except for 2 violations in 2009 for Disposal Site Records^dIn a 2008 EPA RCRA Inspection, they received a handful of violations relating to their thermal units, mostly for reporting issues. No violations after 2008.^eProposed expansion of the existing hazardous waste landfill (B-18) will allow several more years of disposal. Development of a new hazardous waste landfill (B-20) on currently undeveloped land at the site, to open after B-18 reaches capacity and to operate for roughly 24 years (WM, 2011).

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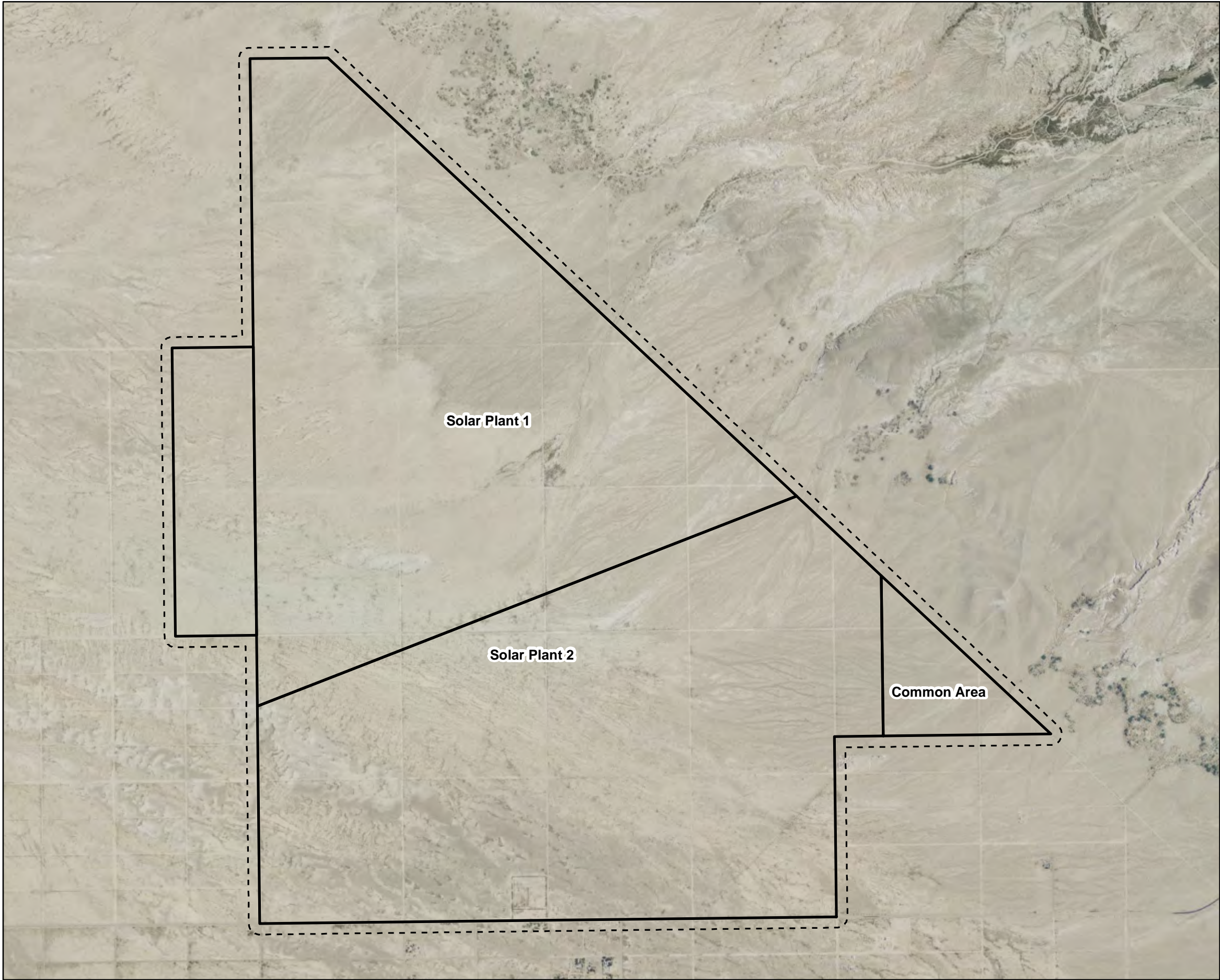
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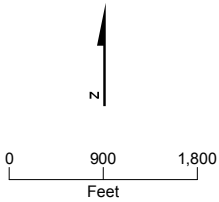
Figures



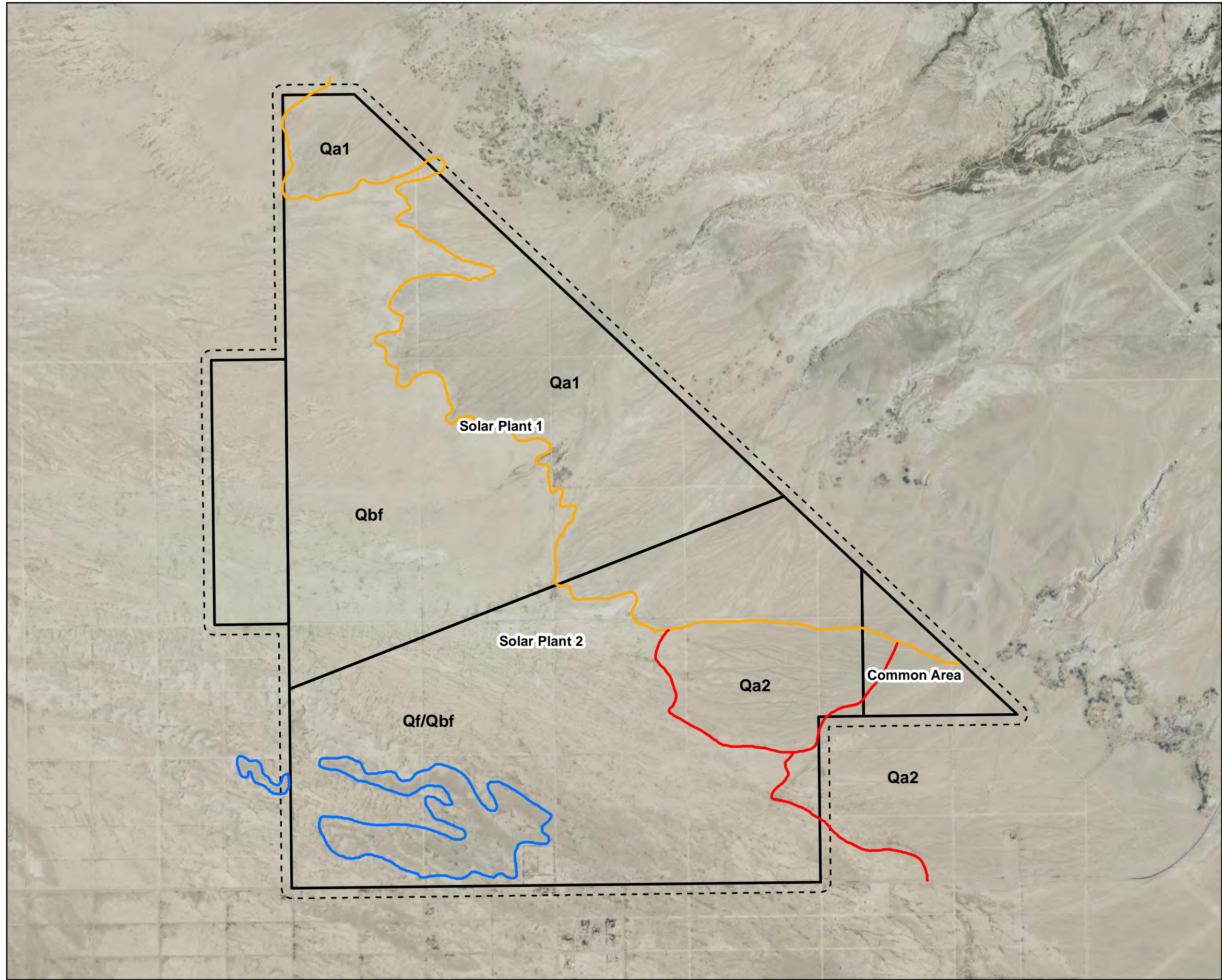
LEGEND

--- 200 ft Buffer

— HHSEGS Boundary



Appendix DR98-1
HHSEGS Project Area
Hidden Hills Solar Electric Generating System



- LEGEND
- 200 ft Buffer
 - HHSEGS Boundary
 - Qa1
 - Qa2
 - Desert Pavement

Qa1 - Holocene alluvium from the northeast
 Qa2 - Holocene alluvium from the east
 Qf - Quaternary (Late Pleistocene and Holocene?) fluvial deposits
 Qbf - Quaternary (Late Pleistocene or older) basin fill

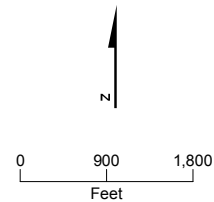


Figure DR101-1
 Land Surface Units
 Hidden Hills Solar Electric Generating System



Fluvial gravels (Qf) comprising a moderately developed desert pavement in limited parts of the southwestern portion of the project site (see map, Figure DR101-1). Hat for scale.

FIGURE DR101-2
Fluvial Gravels Comprising
Desert Pavement
Hidden Hills Solar Electric Generating System

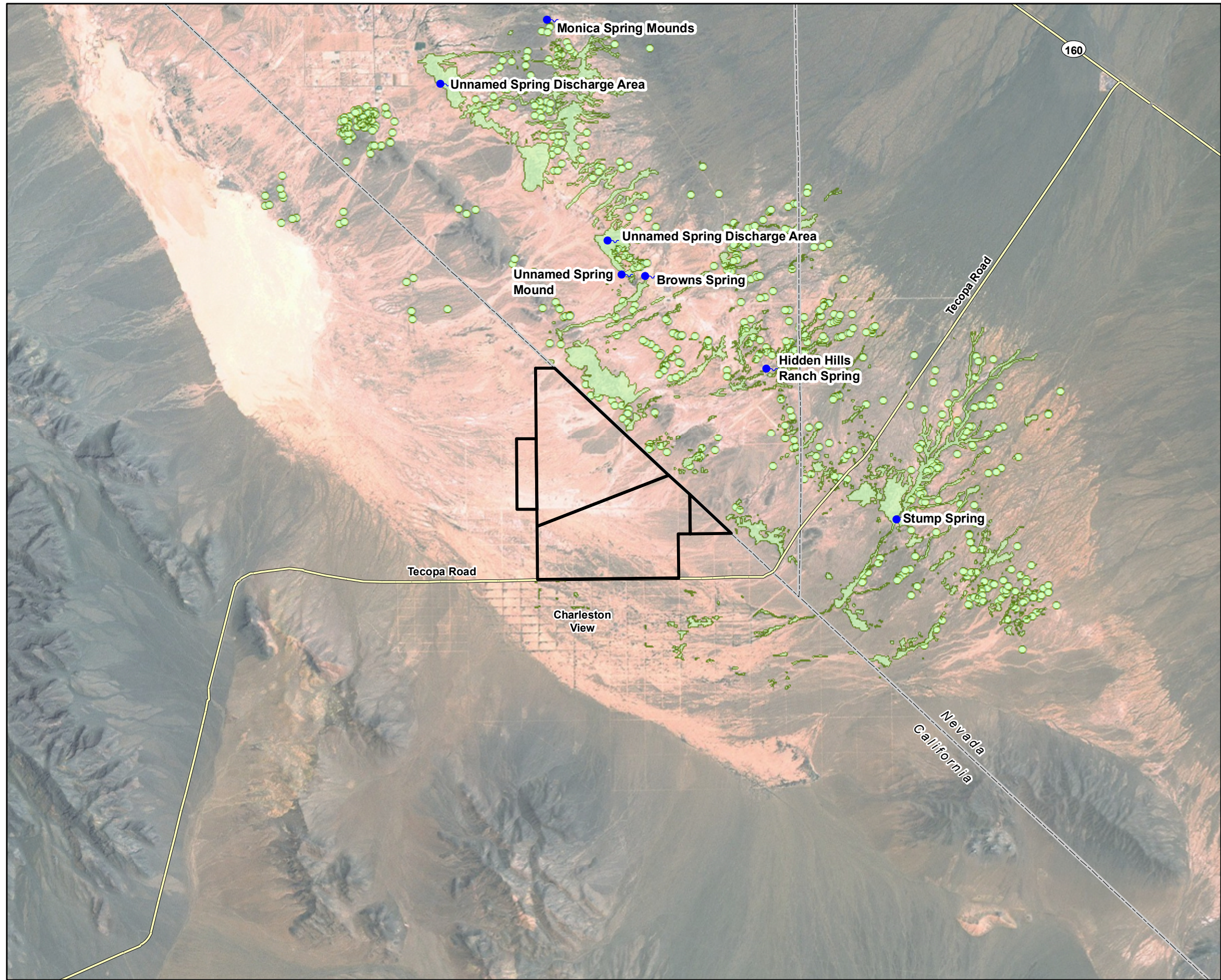


Gravel lag developed on a thin mantle of late Holocene sandy alluvium (Qa). Note that the shallow wash cut in the right foreground has exposed the underlying carbonate-rich basin fill (Qbf) at a depth of not more than 4 to 6 inches below ground surface. Geologist's hammer for scale.

FIGURE DR101-3
Gravel Lag

Hidden Hills Solar Electric Generating System

Figures DR107-1a through 1e have been submitted under a repeated request for confidential designation.



- LEGEND
- Recorded Springs/Recent Spring Mounds
 - Project Boundary
 - County Boundary
 - Groundwater Dependent Vegetation

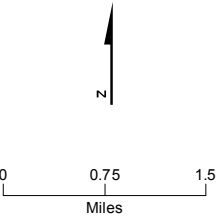


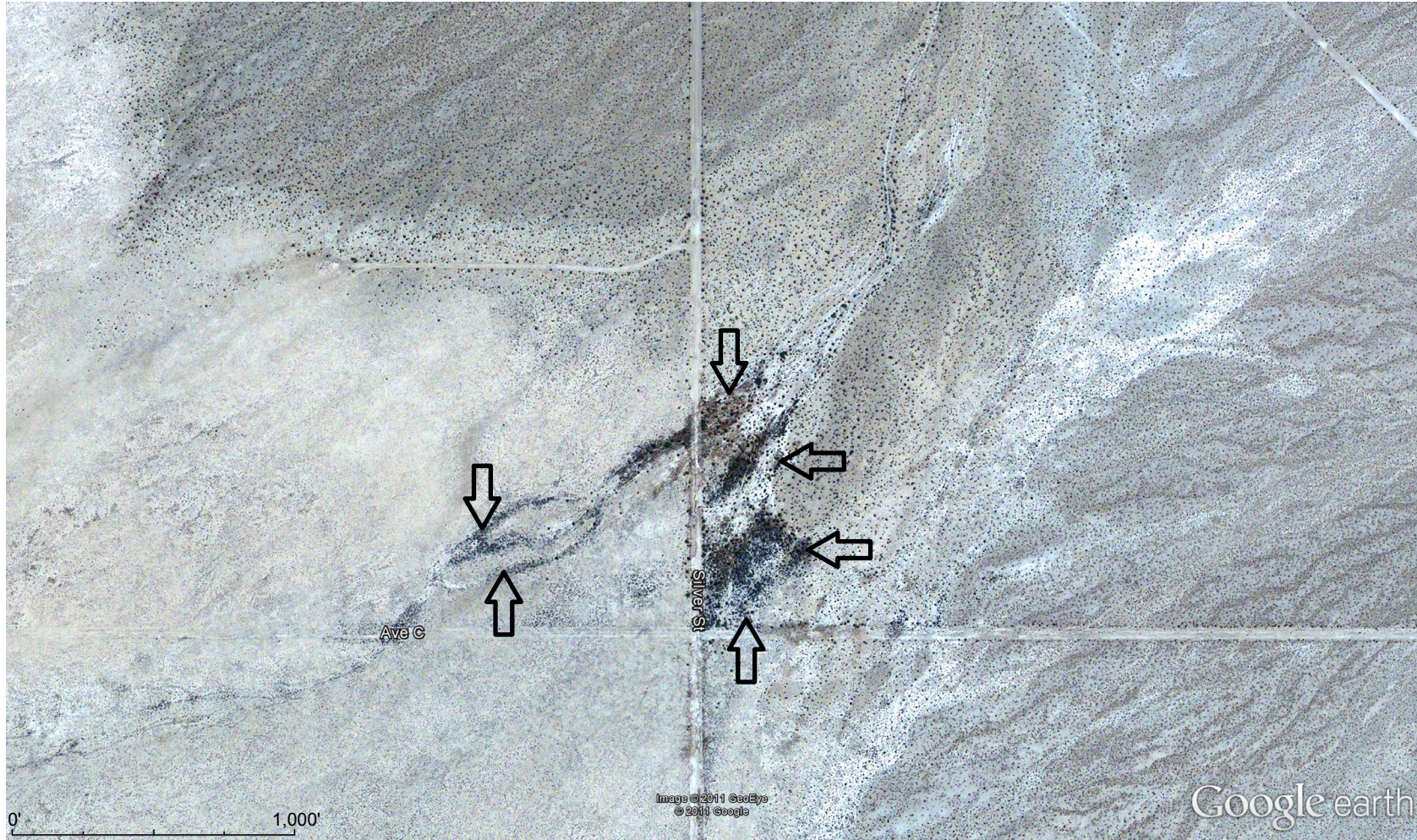
FIGURE DR110-1
Groundwater Dependent Vegetation
in the Southern Pahrump Valley
Hidden Hills SEGS

Figure DR112-1 has been submitted under a repeated request for confidential designation.

Figure DR113-1 has been submitted under a repeated request for confidential designation.

Figure DR113-2 has been submitted under a repeated request for confidential designation.

Figure DR124-1 has been submitted under a repeated request for confidential designation.



An area of silt-rich soils (arrows) supporting relatively dense annual vegetation in the PAA, where the wash leading from Hidden Hills Spring debouches upon the floor of the bolson.

FIGURE DR134-1
Area of Denser Annual Vegetation
Hidden Hills Solar Electric Generating System

Attachments

Attachment DR97-1
Engineering Drawings

Due to size, five sets of these drawings have been submitted to the CEC. Electronic copies will be provided to others upon request.

**Confidential Attachment DR100-1
Interim Assessment of Paleontological
Sensitivity**

Attachment DR100-1 has been submitted under a repeated request for confidential designation.

Attachment DR111-1
Historic Maps

Due to size, five hard copies of these maps have been submitted to the CEC. Electronic copies will be provided to others upon request.

Confidential Attachment DR119-1
Isolate DPR Forms

Attachment DR119-1 has been submitted under a repeated request for confidential designation.

Confidential Attachment DR126-1
DPR Forms for Roads

Attachment DR126-1 has been submitted under a repeated request for confidential designation.



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

**APPLICATION FOR CERTIFICATION
FOR THE *HIDDEN HILLS SOLAR ELECTRIC
GENERATING SYSTEM PROJECT*
HIDDEN HILLS SOLAR HOLDINGS, LLC**

DOCKET NO. 11-AFC-2
PROOF OF SERVICE
(Revised 12/22/2011)

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DECLARATION OF SERVICE

I, Mary Finn, declare that on, January 6, 2012, I served and filed copies of the attached Hidden Hills SEGS Data Response 1D, dated January 6, 2012. The original document, filed with the Docket Unit or the Chief Counsel, as required by the applicable regulation, 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/hiddenhills/index.html].

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

(Check all that Apply)

For service to all other parties:

- x Served electronically to all e-mail addresses on the Proof of Service list;
- Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "e-mail preferred."

AND

For filing with the Docket Unit at the Energy Commission:

- x by sending an original paper copy and one electronic copy, mailed with the U.S. Postal Service with first class postage thereon fully prepaid and e-mailed respectively, to the address below (preferred method); **OR**
- by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT

Attn: Docket No. 11-AFC-2
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

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

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

California Energy Commission
Michael J. Levy, Chief Counsel
1516 Ninth Street MS-14
Sacramento, CA 95814
mlevy@energy.state.ca.us

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



Mary Finn, CH2M Hill