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CH2MHILL

August 6, 2008
File No.: 04.02.06.02
Project No. 357891

Mr. Che McFarlin, Project Manager
California Energy Commission
Systems Assessment and Facilities Siting Division
1516 9th Street, MS 15
Sacramento, CA 95814-5504

RE: Data Response, Set 2C
Ivanpah Solar Electric Generating System (07-AFC-5)

Dear Mr. McFarlin:

On behalf of Solar Partners I, LLC, Solar Partners II, LLC, Solar Partners IV, LLC, and Solar Partners VIII, LLC (Applicant), please find attached one original and 12 hard copies of Data Response, Set 2C, which provides a supplemental response to Staff's Data Request 23, dated May 8, 2008.

Please call me if you have any questions.

Sincerely,

CH2M HILL

John L. Carrier, J.D.
Program Manager

Enclosure
c: POS List
Project File

Ivanpah Solar Electric Generating System (ISEGS)

(07-AFC-5)

Data Response, Set 2C

(Responses to Data Requests: Closure & Restoration, Soil & Water, and Visual Resources)

Submitted to the

California Energy Commission

Submitted by

Solar Partners I, LLC; Solar Partners II, LLC; Solar Partners IV, LLC; and Solar Partners VIII, LLC

August 6, 2008

With Assistance from

CH2MHILL
2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833

Contents

Section Page

Introduction

Attached are Solar Partners I, LLC, Solar Partners II, LLC, Solar Partners IV, LLC, and Solar Partners VIII, LLC (Applicant) responses to the California Energy Commission (CEC) Staff's data requests for the Ivanpah Solar Electric Generating System (Ivanpah SEGS) Project (07-AFC-5). The CEC Staff served these data requests on May 8, 2008, as part of the discovery process for Ivanpah SEGS. The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as CEC Staff presented them and are keyed to the Data Request numbers. 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. AFC figures or tables that have been revised have "R1" following the original number, indicating revision 1.

Additional tables, figures, or documents submitted in response to a data request (supporting data, stand-alone documents such as plans, folding graphics, etc.) are found at the end of a discipline-specific section and may not be sequentially page-numbered consistently with the remainder of the document, though they may have their own internal page numbering system.

The Applicant looks forward to working cooperatively with the CEC and BLM staff as the Ivanpah SEGS Project proceeds through the siting process. We trust that these responses address the Staff's questions and remain available to have any additional dialogue the Staff may require.

Closure and Restoration (125)

BACKGROUND

Section 5.2.11.1, Mitigation Measure 1 – Site Rehabilitation Plan, addresses closure of the project following the cessation of facility operations and discusses elements of a closure plan. Data Request 30 asked for description of the likely components of a closure plan addressing decommissioning methods, timing of any proposed habitat restoration and restoration performance criteria. Applicant's response suggests that each project owner file a closure plan for review and approval at least 12-months prior to commencing the closure activities. BLM believes that the applicant must prepare a plan that addresses closure and restoration activities and that waiting to address the issues at the end of the useful life of the facility, will not ensure satisfactory restoration of the site in the fragile desert environment. In addition, the project design and footprint may need to accommodate vegetation salvage and/or propagation study plots. Further, the plan needs to recognize that closure activities may not only occur at the end of a 30 or 50 year life of the facility, but could happen at intermediate times during the project life.

DATA REQUEST

125. BLM requests the applicant develop a plan that will guide site restoration and closure activities. Initially the plan will describe the anticipated methods applicant proposes for revegetation of disturbed areas using native plant species including perennials, and will include methods used to monitor restoration of and evaluate success of revegetation efforts. The initial site restoration and closure plan will evaluate existing information gathered by applicant and other relevant studies to determine if existing data is sufficient to guide restoration of disturbed lands or if additional research is necessary to determine the most effective means to restore and revegetate the site at closure. The plan must address preconstruction salvage and relocation of succulent vegetation from the site to either an onsite or nearby nursery facility for study and propagation of seed sources to reclaim the disturbed area. In the case of unexpected closure, the plan should assume restoration activities could possibly take place prior to the anticipated lifespan of the plant. Specifically the closure and restoration plan must address the following:

    - Develop a revegetation research program based on information provided by a qualified expert in desert flora and revegetation. The program would include a review of available materials describing methods and success rates of revegetation programs in the Eastern Mojave Desert at similar elevations.
    - A program to evaluate existing native plant vegetation data from the current inventories and identify proposed representative study plot locations within

and adjacent to the project area for each of the four vegetative community subtypes cited in the AFC, Appendix 5.2B. This data will be used to identify dominate species to be used in revegetation. Baseline vegetation measurements from the project area and from surrounding non-disturbed areas must be established prior to any surface disturbing activities and will be used to evaluate and monitor vegetation trends and changing conditions over the life of the project that could be considered impediments to restoration activities (e.g. sustained drought). Prepare and submit a protocol to identify study plots and methodology to evaluate trends to BLM for review and approval prior to beginning studies.

- Identify the extent of succulent plant species to be salvaged and maintained in nursery areas either on site or in close proximity, that would be used for future transplanting and/or in propagation studies for seed sources.
- Monitoring and treatment of invasive species over the life of the project.
- Ground preparation procedures that would be needed to effectively reclaim the area.
- Implementation of monitoring programs after closure to verify revegetation results based upon the established goals for density and diversity.
- Provide yearly updates to agencies of progress achieved in connection to revegetation research.
- Identify, with justification, the vegetation considered unnecessary for revegetation or reclamation research that would be lost during construction that could be made available for public collection through plant salvage sales conducted by BLM.

Response: A draft outline of the Revegetation and Reclamation Plan is provided as Attachment DR125-2A for review and comment. Please provide any comments as soon as possible. We hope to have a draft plan out in August, 2008.

ATTACHMENT DR125-2A

Draft Outline for the Ivanpah Revegetation and Reclamation Plan

1.0 INTRODUCTION

1.1 PLAN PURPOSE
1.2 PROJECT DESCRIPTION
1.2.1 Project Phasing
1.2.2 Construction
1.2.3 Operations
1.2.4 Decommissioning
1.3 PLAN GOALS AND OBJECTIVES
1.3.1 Conformance with Agency Request
1.3.2 Basis Documents
1.4 CONSERVATION AND MANAGEMENT PLANS

2.0 REHABILITATION AREAS

2.1 CONSTRUCTION PHASE
2.1.1 Gas Pipeline
2.1.2 Water Pipeline
2.1.3 Transmission Line
2.1.4 Staging and Laydown Area
2.2 OPERATIONS PHASE
2.3 DECOMMISSIONING
2.4 DESERT REVEGETATION
2.5 SUMMARY OF FINDINGS
2.5.1 Soil Salvage and Preparation
2.5.2 Plant Selection
2.5.3 Plant Propagation
Seed Preparation
Cuttings
Growth Media
2.5.4 Site Conditioning
2.5.5 Planting Methods
Seeding
Plant Salvage/Transplanting
Container Stock
Mulching, Additives & Vesicular-arbuscular Micorrhizae
2.5.6 Soil Moisture and Irrigation Application
2.5.7 Weed Management

3.0 EXISTING SITE CONDITIONS

3.1 PROJECT LOCATION AND JURISDICTION
3.2 PHYSIOGRAPHIC AND BIOGEOGRAPHIC SETTING
3.2.1 Physiograpphy
3.2.2 Biogeography
3.3 LOCAL ENVIRONMENTAL FACTORS
3.3.1 Soils
3.3.2 Precipitation Climatology & Water Resources
3.3.3 Biological Resources
Vegetation
Noxious Weeds
Rare, Threatened, and Endangered Species

4.0 RECOVERY AND REHABILITATION PHASING

4.1 CONSTRUCTION-PHASE REVEGETATION & REHABILITATION
4.1.1 Offsite rights-of-way

Soil and Water Resources (140b., 140e., & 145)

BACKGROUND

Some elements of Data Request 58, the Drainage Erosion and Sediment Control Plan (DESCP), were not answered.

DATA REQUEST

140. Please provide a final DESCP with all elements answered, including those itemized below.

    b. In Section 4.0 of the draft DESCP, a timing and maintenance schedule was provided, but only a general level of detail. A detailed schedule of the timing of the BMPs to be employed and a maintenance schedule for all BMPs needs to be provided for each phase of the project construction and operation. Please provide this detailed schedule.

Response: Table 140b-1 provides an implementation, inspection, and maintenance schedule for each BMP that would be implemented during the construction of each phase of the Ivanpah SEGS project.

TABLE 140b-1
Implementation, Inspection, and Maintenance Schedule for BMPs During Construction of the Ivanpah SEGS Project

BMP	Implementation Timeframe	Inspection Frequency	Maintenance/Repair Program
TEMPORARY EROSION CONTROL BMPs			
EC-1, Scheduling	During preparation of Final SWPPP	Review periodically to make sure it is being followed.	– Update as necessary – If progress deviates, take corrective actions
EC-2, Preservation of Existing Vegetation	Prior to clearing and grading activities	Daily, make sure that construction fencing is maintained.	– Retain protective measures until construction activity is complete – Repair any fencing that has been disturbed or has fallen – Fill trenches as soon as possible
EC-3, Hydraulic Mulch	In succession with construction activities	Before and after rain events, daily during extended rain events, weekly during the rainy season, bi-weekly during the non-rainy season.	– Repair areas where erosion is evident and re-apply BMP as soon as possible

TABLE 140b-1
Implementation, Inspection, and Maintenance Schedule for BMPs During Construction of the Ivanpah SEGS Project

BMP	Implementation Timeframe	Inspection Frequency	Maintenance/Repair Program
EC-6, Straw Mulch	In succession with construction activities	Before and after rain events, daily during extended rain events, weekly during the rainy season, bi-weekly during the non-rainy season.	– Repair areas where erosion is evident and re-apply BMP as soon as possible – Re-apply as needed to maintain effective soil stabilization over disturbed areas and slopes
EC-7, Geotextile and Mats	In succession with construction activities	Before and after rain events, daily during extended rain events or discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Replace/ repair as necessary – Repair areas where erosion is evident and re-apply BMP as soon as possible – If washout or breakage occurs, re-install material after repairing damage to the slope or channel
EC-9, Earth Dikes & Drainage Swales	In succession with construction activities	Before and after rain events, daily during extended rain events or discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season; inspect for washouts.	– Replace lost riprap, damaged linings or soil stabilizers as needed – Remove debris and sediment – Repair linings and embankments as needed
EC-10, Velocity Dissipation Devices	In succession with construction activities	Before and after rain events, daily during extended rain events or discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season; inspect for scour.	– Repair fabric and replace riprap that has washed away – Repair damage to slopes

TABLE 140b-1
Implementation, Inspection, and Maintenance Schedule for BMPs During Construction of the Ivanpah SEGS Project

BMP	Implementation Timeframe	Inspection Frequency	Maintenance/Repair Program
EC-11, Slope Drains	In succession with construction activities	Before and after rain events, daily during extended rain events or discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season; inspect for scour; inspect pipes for leakage; inspect slope drainage for accumulations of debris and sediment; inspect pipe anchors.	– If outlet eroded, repair damage and install additional energy dissipation measures – If scouring downstream, potential need to reduce flows being discharged into the channel or implement other preventive measures – Remove debris and sediment from inlets and outlets; flush drains if necessary – capture and settle out sediment from discharge – Repair undercutting at inlet and if needed, install flared section or rip rap around the inlet – Repair leaking pipes and restore damaged slopes – Install additional anchors if pipe movement is detected
EC-12, Streambank Stabilization	In succession with construction activities	Weekly during the rainy season or discharge of non-stormwater, bi-weekly during the non-rainy season.	– Repair damage
TEMPORARY SEDIMENT CONTROL BMPs			
SE-1, Silt Fence	In succession with construction activities	Before and after rain events, daily during extended rain events or discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Repair undercut silt fences – Repair or replace split, torn, slumping, or weathered fabric – Repair up-rooted sections – Clean out collected soils when greater than 1/3 of the barrier height

TABLE 140b-1
Implementation, Inspection, and Maintenance Schedule for BMPs During Construction of the Ivanpah SEGS Project

BMP	Implementation Timeframe	Inspection Frequency	Maintenance/Repair Program
SE-2, Sediment Basin	In succession with construction activities	Before and after rain events, daily during extended rain events or discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season; inspect basin banks for seepage and structural soundless; inspect inlet and outlet structures and spillway for damage or obstructions; inspect fencing.	– Repair damage to inlet and outlet structures and spillway and remove obstructions as needed – Stabilize eroded areas at inlet and outlet area – Repair fencing as needed – Clean out collected soils when sediment accumulation reaches ½ of the designated storage volume – Remove standing water from basin within 72 hours after accumulation – Attend dewatering operations – Remove accumulation of live and dead floating vegetation in basins during every inspection – Remove excessive emergent and perimeter vegetation as needed
SE-3, Sediment Trap	In succession with construction activities	Before and after rain events, daily during extended rain events or discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season; inspect trap banks for seepage and structural soundness; inspect outlet area for erosion; inspect fencing; inspect outlet structure and spillway for damage or obstructions.	– Stabilize eroded areas at outlet area – Repair trap banks as needed – Repair outlet structure and spillway and remove obstructions as needed – Repair fencing as needed – Take corrective measures if does not dewater completely in 72 hours or less – Remove accumulated sediment when reaches 1/3 of trap capacity – Attend dewatering operations – Remove vegetation from trap
SE-4, Check Dams	In succession with construction activities	Before and after rain events, daily during extended rain events or discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Replace missing rock and bags – Replace degraded bags – Remove accumulated sediment when reaches 1/3 of the barrier height (not required if system in place to control the grade) – Remove accumulated sediment prior to soil stabilization

TABLE 140b-1
Implementation, Inspection, and Maintenance Schedule for BMPs During Construction of the Ivanpah SEGS Project

BMP	Implementation Timeframe	Inspection Frequency	Maintenance/Repair Program
SE-5, Fiber Rolls	In succession with construction activities	Before and after rain events, daily during extended rain events or discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Replace split, torn, unraveling, slumping, rotted or crushed sections – Clean out collected soil when reaches 1/2 the designated sediment storage depth (not required if system in place to control the grade)
SE-6, Gravel Bag Berm	In succession with construction activities	Before and after rain events, daily during extended rain events or discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Replace bags exposed to sunlight every 2 to 3 months – Repair/Reshape/Replace as needed – Repair washouts or other damage as needed – Clean out collected soil when greater than 1/3 of the barrier height
SE-7, Street Sweeping and Vacuuming	At the start of ground disturbance activities	Daily.	– When tracked or spilled sediment is observed outside the construction limits on Yeats Well Road or Colosseum Road, sweep daily – Increase sweeping frequency if necessary – Adjust brooms frequently to maximize efficiency
WIND EROSION CONTROL BMPs			
WE-1, Wind Erosion Control	At the start of ground disturbance activities	Check areas daily that have been protected to ensure coverage; inspect water truck for leaks.	– Fix leaks immediately – Improve coverage for areas missed
TRACKING CONTROL BMPs			
TC-1, Stabilized Construction Entrance/Exit	Prior to other clearing and grading activities	Weekly during the rainy season or discharge of non-stormwater, bi-weekly during the non-rainy season; adjacent roads daily.	– Repair damaged sections – Remove sediment if clogged – Replace gravel when surface voids are visible – Keep roadway ditches clear
TC-2, Stabilized Construction Roadway	Prior to other clearing and grading activities	Weekly during the rainy season or discharge of non-stormwater, bi-weekly during the non-rainy season.	– Keep roadway ditches clear – Periodically apply additional aggregate on gravel roads – Active dirt construction roads are commonly watered three or more times per day during the dry season

TABLE 140b-1
Implementation, Inspection, and Maintenance Schedule for BMPs During Construction of the Ivanpah SEGS Project

BMP	Implementation Timeframe	Inspection Frequency	Maintenance/Repair Program
NON-STORM WATER MANAGEMENT BMPs			
NS-1, Water Conservation Practices	In succession with construction activities	Weekly.	– Repair water equipment as needed
NS-2, Dewatering Operations	Prior to commencement of associated activity	Daily during the discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Unit specific maintenance – If sediment is commingled with other pollutants, dispose of in accordance with all applicable laws and regulations
NS-3, Paving and Grinding Operations	Prior to commencement of associated activity	Daily during the discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Keep ample supplies of drip pans or absorbent materials onsite – Maintain machinery regularly to minimize leaks and drips
NS-4, Temporary Stream Crossing	Prior to commencement of associated activity	Daily during the discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season; inspect for blockage, debris or sediment buildup; inspect for structural weakening; inspect for erosion of abutments, channel scour, riprap displacement, or piping in the soil.	– Remove accumulated sediment behind fords and in culverts periodically – Replace lost or displaced aggregate from inlets and outlets of culverts – Repair structures as needed – Remove blockage and debris
NS-5, Clear Water Diversion	Prior to commencement of associated activity	Daily during the discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Refer to BMP-specific inspection and maintenance requirements
NS-6, Illicit Connection/ Discharge	Prior to commencement of associated activity	Continuously.	– Report discharge immediately to owner and onsite project manager – Prohibit employees and subcontractors from disposing of non-job related debris or materials onsite

TABLE 140b-1
Implementation, Inspection, and Maintenance Schedule for BMPs During Construction of the Ivanpah SEGS Project

BMP	Implementation Timeframe	Inspection Frequency	Maintenance/Repair Program
NS-7, Potable Water	Prior to commencement of associated activity	Daily during the discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Repair leaks immediately
NS-8, Vehicle and Equipment Cleaning	Prior to the use of construction vehicles and equipment onsite	Daily during the discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Repair berms as needed – Remove liquids and sediment as needed – Monitor employees and subcontractors that appropriate practices are being implemented – Prohibit washing personal vehicles and equipment onsite
NS-9, Vehicle and Equipment Fueling	Prior to the use of construction vehicles and equipment onsite	Daily.	– Keep an ample supply of spill cleanup material on the site – Immediately clean up spills and properly dispose of contaminated soil and cleanup materials – Repair leaks or remove equipment offsite
NS-10, Vehicle & Equipment Maintenance	Prior to the use of construction vehicles and equipment onsite	Daily.	– Prohibit the maintenance of vehicle and equipment on-site – Keep an ample supply of spill cleanup material on the site – Maintain waste fluid containers in leak proof condition – Repair leaks or remove equipment offsite
NS-12, Concrete Curing	Prior to commencement of associated activity	Daily during the discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Inspect cure containers and spraying equipment for leaks prior to use – Monitor employees and subcontractors that appropriate measures for storage, handling, and use of curing compounds are being implemented
NS-13, Concrete Finishing	Prior to commencement of associated activity	Daily during the discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Sweep or vacuum up debris from sandblasting at the end of each shift – Remove and contain liquid and solid waste from containment structures and general work area at the end of each shift

TABLE 140b-1
Implementation, Inspection, and Maintenance Schedule for BMPs During Construction of the Ivanpah SEGS Project

BMP	Implementation Timeframe	Inspection Frequency	Maintenance/Repair Program
WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs			
WM-1, Material Delivery and Storage	Prior to the storage or use of materials onsite	Weekly during the rainy season, bi-weekly during the non-rainy season.	– Keep an ample supply of spill cleanup material near the storage area appropriate for the materials being stored – Keep storage areas clean and well organized – Repair any damaged perimeter controls – Repair damaged containment structures – Repair damaged or failing covers – Repair damaged liners
WM-2, Material Use	Prior to the storage or use of materials onsite	Weekly during the rainy season, bi-weekly during the non-rainy season.	– Spot check employees monthly to ensure appropriate practices are being employed – Provide additional training to those found to be storing, handling, or using materials inappropriately
WM-3, Stockpile Management	Prior to the storage or use of materials onsite	Before and after rain events, daily during extended rain events or discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Repair or replace perimeter controls and covers as needed
WM-4, Spill Prevention and Control	Prior to the storage or use of materials onsite	Daily during the discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Update spill control plans and stock cleanup materials as changes occur in the types of chemicals onsite – Stock appropriate spill control and cleanup materials onsite near storage, unloading, and maintenance areas
WM-5, Solid Waste Management	Prior to the storage or use of materials onsite	Daily during the discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Arrange for regular waste collection – Provide more waste storage if not adequate – Remove full dumpsters from the project site – Have stray litter placed in waste containers

TABLE 140b-1
Implementation, Inspection, and Maintenance Schedule for BMPs During Construction of the Ivanpah SEGS Project

BMP	Implementation Timeframe	Inspection Frequency	Maintenance/Repair Program
WM-6 Hazardous Waste Management	Prior to the storage or use of materials onsite	Daily during the discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Arrange for regular hazardous waste collection – Keep waste storage areas clean and organized – Maintain ample spill control and cleanup materials in waste storage areas as appropriate for materials being stored – Repair damaged perimeter controls, containment structures, covers, and liners as needed – Clean up spills immediately and report in conformance with the applicable Material Safety Data Sheet – Maintain hazardous waste manifests onsite
WM-7, Contaminated Soil Management	Prior to commencement of associated activity	Weekly during the rainy season, bi-weekly during the non-rainy season; construction supervisor to monitor storage and disposal procedures.	– Coordinate with appropriate local, state and federal agencies – Implement WM-4 to prevent leaks and spills as much as possible
WM-8, Concrete Waste Management	Prior to commencement of associated activity	Weekly during the rainy season, bi-weekly during the non-rainy season.	– Maintain to provide adequate holding capacity with a minimum freeboard of 4 inches for above grade facilities and 12 inches for below grade facilities – Remove and dispose of hardened concrete – Cleanout washout facility, or provide new washout facility, once the washout is 75% full
WM-9, Sanitary/Septic Waste Management	Upon initiation of project activities	Weekly.	– Weekly cleaning and waste collection – Secure during windy conditions
WM-10, Liquid Waste Management	Prior to commencement of associated activity	Daily during the discharge of non-stormwater, weekly during the rainy season, bi-weekly during the non-rainy season.	– Remove deposited solids in containment areas and capturing devices as needed and at the completion of the task – Dispose of any solids as described in WM-5 – Repair containment areas and captures devices as needed

e. Page 17 of the draft DESCP states that there will be a concrete washout area used during construction. The location and size of this washout area need to be shown on a map of the project site and discussed in the text.

Response: The proposed location for the tire washing and concrete washout areas are provided in Figure DR140e-1.

IVANPAH 2

EXISTING COLOSSEUM ROAD

24'L x 12'W ENTRANCE/OUTLET TIRE WASH WITH SEDIMENT TRAP
TC-3

75"L x 20'W X 2'H CONCRETE WASTE MANAGEMENT
WM-8

COLOSSEUM ROAD

EXISTING TRANSMISSION CORRIDOR

UNDERGROUND WATER LINE WITH 20' EASEMENT, TYP.

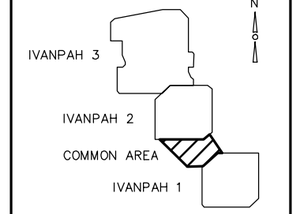
12' WIDE DIRT SITE ACCESS ROAD

30' WIDE PAVED ACCESS ROAD

EXISTING OVERHEAD ELECTRIC TRANSMISSION LINES

EXISTING OVERHEAD ELECTRIC TRANSMISSION TOWER

KEY PLAN
N.T.S.



LEGEND

- UNDERGROUND WATERLINE — W —
- UNDERGROUND GASLINE — GAS —
- 30' PAVED ROAD
- 12' LEVEL DIRT ROAD
- SITE BOUNDARY LINE
- COMBINED PERIMETER/TORTOISE FENCE — X — TF — X —
- EXISTING OVERHEAD ELECTRICAL — OE —

EROSION SEDIMENT CONTROL LEGEND

- CONCRETE WASTE MANAGEMENT — WM-8
- ENTRANCE/OUTLET TIRE WASH — TC-3

NORTH

60' 0 60' 120' 180'
APPROXIMATE SCALE IN FEET

Source: WorleyParsons LTD, Drawing IVAN-0-SK-024-111-001A

FIGURE DR140e-1
TIRE WASH AND CONCRETE WASHOUT AREAS
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

CH2MHILL

ES062007009SAC Figure_DR140E-1.ai 08/04/08 dash

BACKGROUND

In response to Data Requests 63, the applicant provided a map of proposed stockpile locations to be used during construction. The stockpile locations for storing cut soil seem too small given the size of the project and the expected volume of soil and vegetation expected to be generated.

DATA REQUEST

145. Please provide calculations supporting that the size of the stockpile locations are sufficient to support the volume of soil and vegetation expected to be generated.

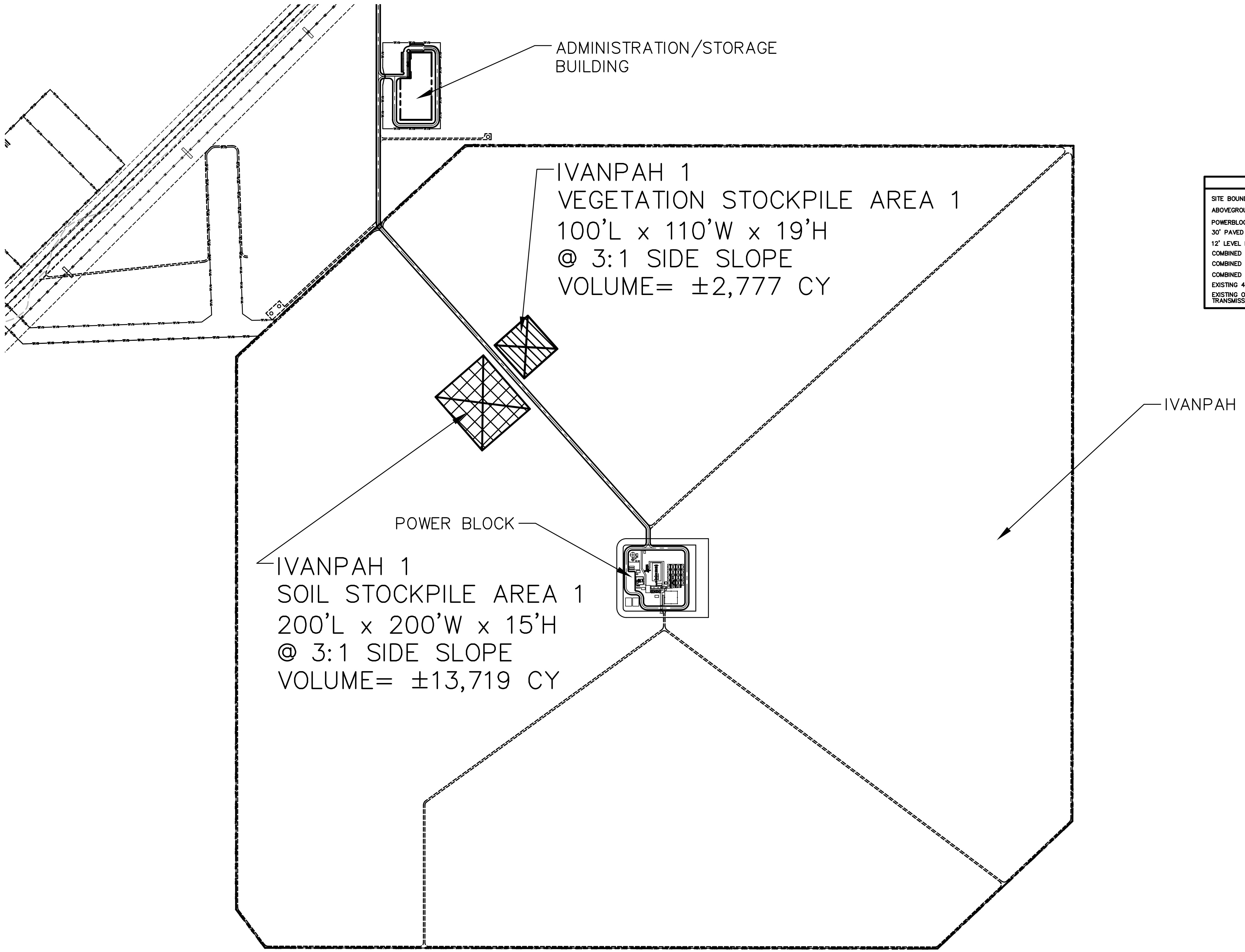
Response: The temporary location(s) and area(s) where soil will be stored prior to the reuse within the sites biological surveyed area, and a calculation of the soil stockpile(s) for Ivanpah 1 are provided in Attachment 145-1.

The stockpile(s) for each of the Ivanpah SEGS units will be conservatively sized to support worst case conditions and will be protected by approved BMPs to minimize erosion. Stockpile(s) will be strategically placed throughout each unit to minimize haul distances. It is assumed that 4 inches of soil will be removed and stockpiled per acre. Additionally, a 10 percent expansion factor will be used for stockpile volume calculations. Only areas requiring major grading and leveling to light grading will require stockpile locations. For these areas, it is assumed that 30 percent of the total soil removed will be stored in the stockpile area. Soil will not be stockpiled in areas requiring only the clearing of vegetation to minor leveling (small cuts and fills).

Vegetation removed from the site is to be placed in vegetative stockpiles located adjacent to soil stock pile areas. For the purposes of sizing the vegetative stockpile area, it is assumed that 60 percent of the vegetation onsite will be removed with 25 percent of the total volume used onsite for soil stabilization and erosion control and 75 percent transported offsite for other uses or disposal. Approximately 2.5 acres of vegetation is assumed to be removed per day, producing approximately 370 cubic yards of mulch. Vegetative stockpile will be sized for only the 25 percent of the total volume used onsite for soil stabilization and erosion control. The location, area, and a calculation of the vegetative stockpile(s) for Ivanpah 1 are provided in Attachment 145-1.

ATTACHMENT 145-1

Stockpile Location & Calculations
Ivanpah I



NORTH

LEGEND

SITE BOUNDARY LINE	
ABOVEGROUND PIPING	
POWERBLOCK FENCE	
30' PAVED ROAD	
12' LEVEL DIRT ROAD	
COMBINED PERIMETER/TORTOISE FENCE	X — TF — X
COMBINED PERIMETER/TORTOISE FENCE	— X —
COMBINED PERIMETER/TORTOISE FENCE	— TF —
EXISTING 4WD TRAILS	
EXISTING OVERHEAD ELECTRIC TRANSMISSION LINES	— OE —

PRELIMINARY
FOR INFORMATION ONLY

REV	DATE	DESCRIPTION	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/TECH. SPEC	LEAD DISC ENGINEER	PROJ ENGR MANAGER	PROJECT MANAGER
A	07 31 08	ISSUED FOR REVIEW/PRELIMINARY	GG	BC	BC	BG	DW	DW	JK

PRELIMINARY STATUS — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE DAVID WILSON 07/31/08

APPROVED STATUS — DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.
LDE

ORIGINATING PERSONNEL
DRAWN BY: BRIAN BURT
CHECKED BY: BRAD CARVER
LEAD DESIGNER: BRAD CARVER
ENGINEER/TECH SPECIALIST: BRIAN GILBERT
PROJECT ENGINEERING MANAGER: DAVID WILSON
PROJECT MANAGER: JIM KIMURA

Zero Harm — Leadership, No Incidents, Safe Behavior

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE
BRIGHTSOURCE ENERGY, INC.
IVANPAH SOLAR ELECTRIC
GENERATING SYSTEM

IVANPAH 1
PROPOSED STOCK PILE AREA
LOCATION PLAN
DRAWING 1 OF 1

SCALE: NTS
DRAWING SIZE: ARCH E (36" x 48")
WORLEYPARSONS DWG. NO.: IVAN-0-SJ-SPOILS AREAS
REV: A

DWG-FILE:
DWG-DATE: 11/7/07

DIMENSIONS AND VOLUMES OF SOIL STOCKPILE

Dimensions are calculated from the top dimensions and the side slope.
Volumes are calculated using the conic method.

ELEVATIONS		
Bottom of Stockpile	0.00	FT
Top of Pile	15.00	FT

AREA OF DISTURBANCE		
Major Grading	32.00	ACRES
Leveling/Light Grading	45.00	ACRES

Side Slope	3.00	H:V

BOTTOM DIMENSIONS		
Length	200.00	FT
Width	200.00	FT
Area	40,000.00	SQ.FT

ASSUMPTIONS

4 inches of soil removed (0.333 FT)
10% Expansion Factor
30% of soil to be stockpiled

TOP DIMENSIONS		
Length	110.00	FT
Width	110.00	FT
Area	12,100.00	SQ.FT

VOLUME OF STOCKPILE

370,500.00 CF
8.51 ACRE-FT
13,719.39 CY

DIMENSIONS AND VOLUMES OF IVANPAH 1 - VEG STOCKPILE AREA 1

Dimensions are calculated from the top dimensions and the side slope.
Volumes are calculated using the conic method.

ELEVATIONS		
Bottom of Stockpile	0.00	FT
Top of Stockpile	19.00	FT
Side Slope	3.00	H:V

BOTTOM DIMENSIONS		
Length	100.00	FT
Width	110.00	FT
Area	11,000.00	SQ.FT

TOP DIMENSIONS		
Length	-14.00	FT
Width	-4.00	FT
Area	56.00	SQ.FT

AREA OF DISTURBANCE
77.00 ACRES

ASSUMPTIONS
60% Vegetation to be removed
25% of Cut Vegetation used to size stockpile
75% of Vegetation trucked offsite
2.5 Acres of Vegetation is cut each day
370 CY of Vegetation produced each day

VOLUME OF STOCKPILE

74,992.09	CF
1.72	ACRE-FT
2,776.91	CY

Visual Resources (147 & 148)

BACKGROUND

CEC and BLM staff continue to be concerned about potential visual effects to recreational visitors within the project viewshed, which includes the Ivanpah dry lakebed, Joshua Tree Highway, and heavily used recreational destinations within the Mojave National Preserve. BLM staff have identified a list of sensitive recreational key points of observation (KOPs) for purposes of analysis in the Staff Assessment/EIS.

DATA REQUEST

147. Please provide visual simulations, utilizing 'normal' (50 mm equivalent or approximately 40-degree angle of view), of the following new recreational KOPs:

Response: The BLM and CEC agreed that visual simulations of the project be prepared for six of the seven suggested KOP locations. Both the existing conditions photos and the visual simulations have been sized to fill as much of an 11 x 17 sheet of paper as possible. To maintain the integrity of the photo, the title block and file name of each existing condition photo and visual simulation are printed on the back side of each photo.

Figure DR147-1 shows the locations of all six KOP existing condition photographs (Figures DR148-1 through DR148-6) and the visual simulations (Figures DR147-2 through DR147-7), as well as the direction that the camera was pointed when the photo was taken. The KOPs are as follows:

- Umberci Mine: KOP 5
- Benson Mine: KOP 6
- I-15 & Nipton Road: KOP 7
- Ivanpah Dry Lake (East): KOP 8
- Ivanpah Dry Lake (West): KOP 9
- Whiskey Pete's: KOP 10

a. Umberci Mine (from hill top in NW corner, above mine looking down on site) (KOP 5)

Response: Figure DR147-2 is a visual simulation of the view of the project from approximately 150 feet above the valley on a hill to the north of the project. The simulation shows the grading (a tan color), the fields of heliostats (mirrors) (light blue and charcoal gray, depending on the angle), the Ivanpah 1 receiver in the center of the photo (small and faint), the Ivanpah 2 receiver (very faintly between two Ivanpah 3 receivers [the northeast and southeast receivers]), and the center Ivanpah 3 receiver at the right edge of the photo (the northwest and southwest Ivanpah 3 receivers are not shown in this photo). The nearest receiver shown in the photo (i.e., the largest one shown, which is the Ivanpah 3 northeast receiver) is approximately 1.4 miles from this KOP.

b. Benson Mine (from hill top above mine looking down on site, (via Colosseum Road) (KOP 6)

Response: Figure DR147-3 is a visual simulation of the view of the project from approximately 450 feet above the valley on a hill to the west of the project. The simulation shows the grading (a tan color) and the fields of mirrors (light blue and charcoal gray, depending on the angle). From left to right, nearly all of Ivanpah 3 is visible; all of Ivanpah 2 is visible, with a drainage channel shown in the mirror field (light gray); the electrical substation is visible; and a portion of the Ivanpah I mirror field is shown at the far right of the photo. The nearest receiver shown in the photo (i.e., the Ivanpah 3 southwest receiver) is approximately 4 miles from this KOP.

c. I-15 & Nipton Rd. (from I-15 off-ramp) (KOP 7)

Response: Figure DR147-4 is a visual simulation of the view of the project from ground level at the I-15/Nipton Road northbound on-ramp to I-15, located on the east side of I-15. All of the three phases of the project are visible from this view. Grading is shown as tan, the mirror fields are shown as light blue and charcoal gray, and the visibility of the receivers fades with distance. The nearest receiver shown in the photo (i.e., the Ivanpah 1 receiver) is approximately 4.4 miles from this KOP.

d. Nipton Store, Nipton

Response: BLM and CEC representatives agreed that a visual simulation did not need to be prepared from this KOP; therefore, no simulation is provided.

e. Ivanpah Dry Lake (East) (KOP 8)

Response: Figure DR147-5 is a visual simulation of the view of the project from ground level on the east side of the Ivanpah Dry Lake. The Ivanpah 2 receiver is visible on the left side of the photo, with minimal visibility of its mirror field (light blue and charcoal gray). Two of the Ivanpah 3 receivers are visible; light from a third Ivanpah 3 receiver is visible above the rock outcrop in the center of the photo. No grading is visible from this view. The nearest receiver shown in the photo (i.e., the Ivanpah 2 receiver) is approximately 4.7 miles from this KOP.

f. Ivanpah Dry Lake (West) (KOP 9)

Response: Figure DR147-6 is a visual simulation of the view of the project from ground level on the west side of the Ivanpah Dry Lake. The Ivanpah 2 receiver is visible on the left side of the rock outcrop, with minimal visibility of its mirror field (charcoal gray). The five Ivanpah 3 receivers are visible on the right side of the rock outcrop (one receiver is on the right edge of photo), and the mirror field is minimally visible (also charcoal gray). No grading is visible from this view. The nearest receiver shown in the photo (the southeast Ivanpah 3 tower) is approximately 1.4 miles from this KOP.

g. Whiskey Pete's (KOP 10)

Response: Figure DR147-7 is a visual simulation of the view of the project from ground level within the Whiskey Pete's semi-truck and trailer parking lot at a point that is located approximately 650 feet southwest of the Whiskey Pete's Hotel and Casino in Primm,

Nevada. The Ivanpah 1 receiver is shown on the left side of the photo; light from the Ivanpah 2 receiver is shown above the rock outcrop in the center of the photo; and the five Ivanpah 3 receivers are visible on the right side of the rock outcrop. The mirror fields are shown as charcoal gray. No grading is visible from this view. The nearest receiver shown in the photo (the northeast Phase 3 tower) is approximately 5.1 miles from this KOP.

148. Please provide candidate KOP photographs of the above sites for staff review, prior to development of the simulations.

Response: Candidate KOP photographs for the seven suggested KOP locations were reviewed by Mona Daniels and Bill Kanemoto (BLM and CEC representatives, respectively) in June 2008. The six photographs[1] chosen to be simulated consist of the following photos (locations of photos are shown on Figure DR147-1):

- Umberci Mine: KOP 5 – Figure DR148-1.
- Benson Mine: KOP 6 – Figure DR148-2.
- I-15 & Nipton Road: KOP 7 – Figure DR148-3.
- Ivanpah Dry Lake (East): KOP 8 – Figure DR148-4.
- Ivanpah Dry Lake (West): KOP 9 – Figure DR148-5.
- Whiskey Pete's: KOP 10 – Figure DR148-6.

[1] The photographic view from Nipton Store (Nipton Trading Post) was not selected for visual simulation by the BLM and CEC representatives.

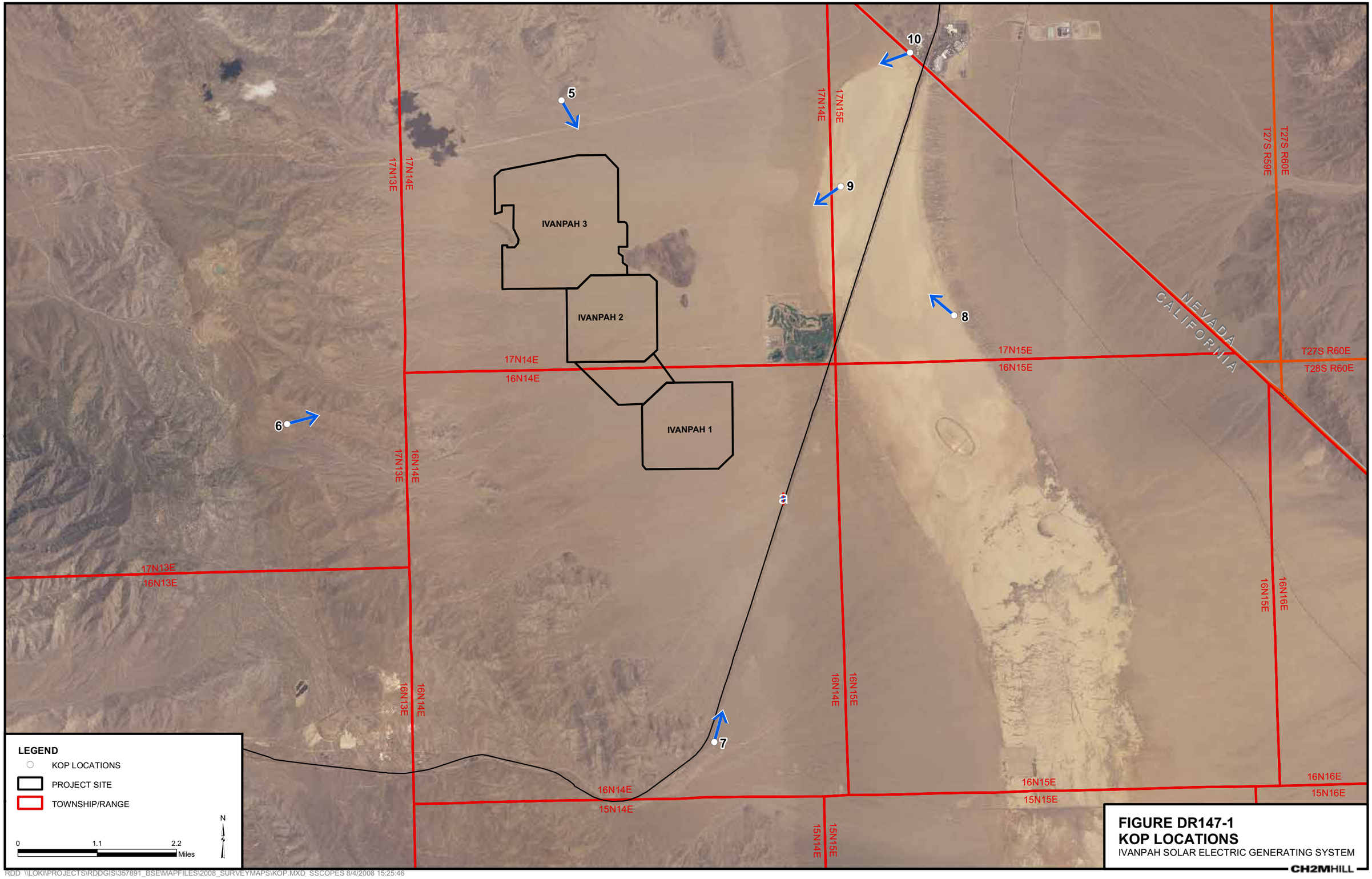


FIGURE DR147-1
KOP LOCATIONS
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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FIGURE DR147-2
UMBERCI MINE SIMULATED PROJECT VIEW (KOP 5)
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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FIGURE DR147-3
BENSON MINE SIMULATED PROJECT VIEW (KOP 6)
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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FIGURE DR147-4
I-15 & NIPTON ROAD SIMULATED PROJECT VIEW (KOP 7)
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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FIGURE DR147-5
IVANPAH DRY LAKE (EAST) SIMULATED PROJECT VIEW (KOP 8)
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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FIGURE DR147-6
IVANPAH DRY LAKE (WEST) SIMULATED PROJECT VIEW (KOP 9)
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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FIGURE DR148-1
UMBERCI MINE EXISTING CONDITIONS VIEW (KOP 5)
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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FIGURE DR148-2
BENSON MINE EXISTING CONDITIONS VIEW (KOP 6)
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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FIGURE DR148-3
I-15 & NIPTON ROAD EXISTING CONDITIONS VIEW (KOP 7)
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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FIGURE DR148-4
IVANPAH DRY LAKE (EAST) EXISTING CONDITIONS VIEW (KOP 8)
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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FIGURE DR148-5
IVANPAH DRY LAKE (WEST) EXISTING CONDITIONS VIEW (KOP 9)
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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FIGURE DR148-6
WHISKEY PETE'S EXISTING CONDITIONS VIEW (KOP 10)
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

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

APPLICATION FOR CERTIFICATION FOR THE *IVANPAH SOLAR ELECTRIC GENERATING SYSTEM*	**DOCKET NO. 07-AFC-5** **PROOF OF SERVICE (Revised 7/14/08)**

INSTRUCTIONS: All parties shall 1) send an original signed document plus 12 copies OR 2) mail one original signed copy AND e-mail the document to the web address below, AND 3) all parties shall also send a printed OR electronic copy of the documents that shall include a proof of service declaration to each of the individuals on the proof of service:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-5
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DECLARATION OF SERVICE

I, Mary Finn, declare that on August 7, 2008 I deposited copies of the attached Data Response, Set 2C in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

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

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

Mary Finn