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June 19, 2012

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

Subject: Applicant's Response to Data Requests, Set 2A (#155-172)
Rio Mesa Solar Electric Generating Facility (11-AFC-04)

Dear Mr. Martinez:

On behalf of Rio Mesa Solar I, LLC and Rio Mesa Solar II, LLC, collectively the "Applicant" for the Rio Mesa Solar Electric Generating Facility project ("Rio Mesa SEGF"), we submit the Applicant's Response to Data Requests, Set 2A (#155-172) in response to staff data requests filed on May 21, 2012.

Sincerely,

Angela Leiba, Vice President
Senior Project Manager/ Environmental Department Manager

Enclosure

cc: POS List
Project File

Applicant's Response to Data Requests, Set 2A (Nos. 155-172)

for the

Application for Certification

for the

Rio Mesa Solar Electric Generating Facility (Rio Mesa SEGF)

(11-AFC-04)

Submitted to the

California Energy Commission

Submitted by

Rio Mesa Solar I, LLC
Rio Mesa Solar II, LLC

June 19, 2012

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Introduction

Attached are responses from Rio Mesa Solar I, LLC and Rio Mesa Solar II, LLC, (collectively the "Applicant") to the California Energy Commission (CEC) Staff's Data Requests Set 2A (Nos. 155 – 172). Staff served these data requests on May 21, 2012. The responses are grouped into the following disciplines: Biological Resources, Soil and Water Resources, Traffic and Transportation – Glint and Glare, Alternatives, and Socioeconomics. Responses are presented in the same order provided by CEC staff, and are keyed to the data request number (155 through 172). Tables and attachments are numbered in reference to the data request number.

On June 8, 2012, Applicant provided notice pursuant to Title 20, California Code of Regulations, Section 1716(f). Applicant partially objected to and provided notice for more time on Data Request 159. Applicant also provided notice for more time on Data Requests 167 and 172.

Biological Resources (Nos. 155-167)

Data Request:

155. Please provide a Draft Desert Kit Fox Management Plan, to completely describe all methods that may be used for desert kit fox passive relocation, including:

a. A pre-construction survey and clearance field protocol, to determine:

i. The number and locations of single or paired kit foxes on the project site that would need to be passively relocated; and
ii. The number and locations of desert kit fox burrows or burrow complexes that would need to be collapsed to prevent reoccupancy by the animals;

b. Qualitative discussion of availability of suitable habitat on off-site surrounding lands within 10 miles of the project boundary, and quantitative evaluation of unoccupied desert kit fox burrows available on surrounding lands within 1 mile of the project boundary (e.g., by inventorying burrow numbers in selected representative sample areas);
c. Estimates of the distances kit foxes would need to travel across the project site and across adjacent lands to safely access suitable habitat (including burrows) off-site;
d. Proposed scheduling of the passive relocation effort;
e. Methods to minimize likelihood that the animals will return to the project site;
f. Descriptions of any proposed or potential ground disturbing activities related to kit fox relocation (e.g., artificial burrow construction);
g. A monitoring and reporting plan to evaluate success of the relocation efforts and any subsequent re-occupation of the project site; and
h. A plan to subsequently relocate any animals that may return to the site (e.g., by digging beneath fences).

Additionally, please coordinate with CDFG to establish procedures and contacts to notify the agency, and any additional procedures to be taken, if potentially infected kit foxes are identified on site.

Response:

Please see attached Draft Desert Kit Fox Management Plan (Attachment DR 155-1). All Data Request items a-h have been addressed in the draft plan.

Data Request:

156. Clarify whether botanical surveys of the project area targeted creosote rings.

Response:

Botanical surveys of the project area did not target creosote rings. However, all locations of creosote were noted in all botanical surveys.

Biological Resources (Nos. 155-167)

Data Request:

157. If surveys did not target creosote rings, please determine whether any occur within the project area using high resolution aerial photography. If determined present in the project area through surveys or imagery analysis, provide a map showing the locations of all creosote rings and their estimated diameter.

Response:

Since creosote rings were not targeted during surveys, high resolution aerial imagery was reviewed for any sign of creosote rings. None were noted.

Data Request:

158. Because the proposed project would remove native plants regulated under the California Desert Native Plants Act, please analyze conformance of the proposed project with this Act, including provisions for harvesting and cutting of regulated species (cacti, ocotillo, catclaw acacia, palo verde, and ironwood).

Response:

Pursuant to Food and Agriculture Code 80117(a) and (c), the project is not prohibited from harvesting and cutting species regulated under the California Desert Native Plants Act, provided the regulated species are not transported from the project site, are not offered for sale, and further provided the applicant provides the commissioner at least ten days of notice prior to harvesting or cutting any regulated species.

Data Request:

159. Please provide a three-dimensional graphical model of the southern 250 MW (net) facility proposed for Rio Mesa SEGF under full-load, partial-load and full standby status, illustrating the composite effect of convective heat and radiant flux. The modeled convective heat should include elevated temperature of the receiver tower and heliostat surfaces on surrounding air. The modeled radiant flux must include all radiant energy, including (1) ambient solar energy; (2) energy reflected and/or radiated from heliostats to the receiver tower, the standby locations, and the surrounding air; and (3) energy reflected and/or radiated from the receiver tower

a. The partial-load model should be based on typical load level expected during spring and fall midday operating conditions.
b. The radiant flux model should show the density conditions as contours at 2.5 kW/m2, 10 kW/m2, 25 kW/m2, 50 kW/m2 and 150 kW/m2.
c. The graphical model of the convective heat patterns should show the data at the receiver tower and the heliostats for the following conditions: still-air and at 2m/sec. wind speed.

d. Where separate convective and radiant models are used, provide numerical values of cumulative or additive effect.

e. Please provide this modeled radiant flux data for vertical space, from the ground surface to twice the height of the receiver tower or to the highest altitude where cumulative energy flux is 2.5 kW/m2 or greater. The radial boundaries of the modeled area should include the farthest heliostat row from the receiver.

f. The boundaries of the analysis should identify the location of the microphyll woodland habitat that would be retained within the mirror field in Section 22.

g. Please describe significant differences (if any) among expected energy flux contours at the central and northern facilities and the modeled energy flux contours at the southern facility. Should the northern facility be removed from the project proposal, then continue to describe the significant differences between the central and southern facility.

Response:

On June 8, 2012, Applicant objected to the portion of Data Request 159 that requests modeling showing density conditions as contours at 2.5 kW/m^2. On June 13, 2012, provided a supplemental notice for more time to provide a response to the other information requested in Data Request 159. Without waving its objection, Applicant will endeavor to provide the other information requested in Data Request 159 by July 20, 2012.

Data Request:

160. For each drainage system within the project area, please provide representative photographs for the following feature types as applicable, and show locations of these photographs in a 1:3,600 or finer scale map:

a. Narrow ephemeral channels;
b. Braided ephemeral channels;
c. Intermittent channels;
d. Single-thread channels;
e. Compound channels;
f. Discontinuous channels;
g. Low-flow channels and associated floodplains;
h. Alluvial fans;
i. Manmade ditches and culverts; and
j. Wetland feature types.

Response:

Applicant understands that CDFG and CEC no longer request this information because the existing information provided to CDFG is sufficient to validate Applicant's preliminary delineation of state jurisdictional wetlands and waters." Please see CDFG request[1] – Data Request 160 is rescinded.

Data Request:

161. In a table, please summarize the jurisdictional acreage of each of the above geomorphic feature types for each drainage system. In an Excel table, please show a detailed computation of acreage by feature type.

Response:

Applicant understands that CDFG and CEC no longer request this information because the existing information provided to CDFG is sufficient to validate Applicant's preliminary delineation of state jurisdictional wetlands and waters." Please see CDFG request[1] – Data Request 161 is rescinded.

Data Request:

162. In a 1:3,600 or finer scale map, please show:

a. The project footprint and outline of any project related disturbance areas; and
b. Numerical values of elevation contour lines and widths of jurisdictional features.

Response:

Enclosed is a pdf and E-sized plot of:

162a: Two e-sized plots (Attachment 162a-1 covering the main project site and Attachment 162a-2 covering the transmission line corridor) of the project footprint and outline of any project related disturbance areas.

162b: Two e-sized plots (Attachment 162b-1 covering the main project site and Attachment 162b-2 covering the transmission line corridor) of the numerical values of elevation contour lines and widths of jurisdictional features.

[1] See email from Todd Stewart to Dr. Sharma/CDFG dated 6/7/12 at 4pm for further clarification.

Biological Resources (Nos. 155-167)

Data Request:

163. In a table, please summarize the jurisdictional acreage of each of the above geomorphic feature types for each drainage system. In an Excel table, please show a detailed computation of acreage by feature type.

Response:

See Table DR 163-1 summarizing the jurisdictional acreage of vegetation type/land cover by drainage system. The table shows the acreage of waters within the three main project areas: construction logistics area, transmission line corridor and the project site itself.

Table DR 163-1
Jurisdictional Acreage of Vegetation Type/Land Cover by Drainage System

Vegetation Community	Drainage System (acres)										Total (acres)
	A	B	C	D	E	F	G	H	I	Tline	
Construction Logistics Area											
Blue Palo Verde/ Ironwood Woodland	0	0	0	0	0.001	0.419	0	0	0	0	**0.420**
Brittle Bush/Ferocactus Scrub	0	0	0	0	0	0	0	0	0	0	**0**
Creosote/White Burr Sage Scrub	0	0	0	0	0.004	0.162	0.097	0	0	0	**0.263**
Creosote Bush/White Burr Sage Scrub with Big Galleta Grass Association	0	0	0	0	0.018	1.049	0.110	0	0	0	**1.177**
Creosote Bush Scrub	0	0	0	0	0	0.031	0	0	0	0	**0.031**
Desert Dunes	0	0	0	0	0	0	0	0	0	0	**0**
Total, Construction Logistics Area	**0**	**0**	**0**	**0**	**0.023**	**1.661**	**0.206**	**0**	**0**	**0**	**1.890**
Fenceline Boundary of Solar Field[1]											
Blue Palo Verde/ Ironwood Woodland	0	0.225	0	1.199	93.549	0	321.589	284.723	2.378	0	**703.662**
Brittle Bush/Ferocactus Scrub	0	0	0	0	1.378	0	0	0	0	0	**1.378**
Creosote/White Burr Sage Scrub	0	0	0	0.170	1.885	0.289	41.419	20.727	0.094	0	**64.585**
Creosote Bush/White Burr Sage Scrub with Big Galleta Grass Association	0	0	0	0.001	0	0	0	0.049	0	0	**0.051**
Creosote Bush Scrub	0	0	0	0.001	0.047	0.029	18.925	21.233	0	0	**40.234**
Desert Dunes	0	0	0	0	0	0	0	0	0	0	**0**
Total, Fenceline Boundary	**0**	**0.225**	**0**	**1.371**	**96.859**	**0.318**	**381.933**	**326.732**	**2.472**	**0**	**809.909**

of Solar Field											
Common Generator Tie Line (gen-tie line)											
Blue Palo Verde/ Ironwood Woodland	12.747	28.645	3.396	0.550	55.918	0	0	0	0	42.515	**143.770**
Brittle Bush/Ferocactus Scrub	0	0	0	0	0	0	0	0	0	0	**0**
Creosote/White Burr Sage Scrub	2.067	0.67	0.073	2.101	1.605	0	0	0	0	0.119	**6.637**
Creosote Bush/White Burr Sage Scrub with Big Galleta Grass Association	0	0.541	0.400	0.094	0	0	0	0	0	0	**1.035**
Creosote Bush Scrub	0.661	1.479	0.073	0.301	0.284	0	0	0	0	8.015	**10.813**
Desert Dunes	0	0	0	0	0	0	0	0	0	5.938	**5.938**
Total, Common Generator Tie Line (gen-tie line)	**15.474**	**31.335**	**3.942**	**3.046**	**57.807**	**0**	**0**	**0**	**0**	**56.617**	**168.222**
Total, Drainage Systems	**15.474**	**31.56**	**3.942**	**4.417**	**154.689**	**1.979**	**382.139**	**326.732**	**2.472**	**56.617**	**980.021**

Notes:

1. Fenceline boundary of solar field includes the two solar plants as well as the common area, switchyard, and gas metering yard.

Biological Resources (Nos. 155-167)

Data Request:

164. In a table, please summarize the jurisdictional acreage by soil texture classes occurring in each drainage system. In an Excel table show a detailed computation of the acreage by soil classes.

Response:

Applicant understands that CDFG and CEC no longer request this information because the existing information provided to CDFG is sufficient to validate Applicant's preliminary delineation of state jurisdictional wetlands and waters." Please see CDFG request[1] – Data Request 164 is rescinded.

Data Request:

165. *Please provide a detailed proposal for mitigating impacts to a minimum of 1,265 acres of CDFG-jurisdictional washes, including 621 acres of USACE jurisdictional washes, and 1,120 acres of microphyll (blue palo verde/ironwood) woodland, at the 3:1 compensation ratio described in the NECO Plan. The proposal should include any feasible compensation measures, such as acquisition and protection of off-site lands and/or habitat creation or restoration. If habitat creation and/or enhancement are proposed, please provide information to demonstrate that they would mitigate temporal and spatial habitat loss. The proposal should include descriptions of successful large-scale microphyll woodland restoration in California and identification of large areas of degraded lands that (1) contain suitable soils, hydrology, and topography for microphyll woodland restoration; and (2) can be protected and managed in perpetuity. If lands within the Lower Colorado River Multi-Species Conservation Plan area are proposed as a component of the mitigation proposal, please describe components of that Plan that may be applicable to microphyll woodland habitat creation and enhancement.*

Response:

CEC Data Request #165 notes, "1,265 acres of California Department of Fish and Game (CDFG) washes" and "621 acres of US Army Corps of Engineers (ACOE) washes" are within the project boundary and require mitigation. Due to the Environmental Enhancement Proposal by Applicant, which removes Rio Mesa 3 from the project, reconfigures the northern boundary of RMS-2 to avoid impacts to BLM land, and the relocation of the permanent common area facilities to west of the WAPA transmission lines, the acres of washes (CDFG and ACOE) within the project have been substantially lessened. Those numbers are now 810[2] acres of CDFG washes within the project fenceline and 392 acres of ACOE washes within the project fenceline.

Additionally, the number of ACOE wash acres to be potentially "impacted" (temporary or permanent) that could require mitigation are a much reduced subset of the washes on-site. A total of 21.71 acres of temporary disturbance and 40.8 acres of permanent disturbance have been agreed to with the ACOE per formal acceptance of the Preliminary Jurisdictional Determination (PJD)[3] on February 8, 2012 prior to the removal of Rio Mesa 3. An updated calculation will be presented to ACOE for approval based on the exact same methodology as the original agreement but without Rio Mesa 3. Those reduced numbers will be included in the environmental enhancement filing to come in July.

[2] CDFG has yet to agree upon delineations so this number is an estimate based on currently mapped washes.
[3] The PJD form was docketed with the CEC on 2-10-12.

Finally, the CDFG has yet to formalize temporary and permanent acreage impacts. With the removal of Rio Mesa 3, CDFG temporary and permanent impacts will be lessened in a similar manner as ACOE. Similar to the ACOE wash acres, those reduced numbers will be included in the environmental enhancement filing to come in July.

A detailed proposal for mitigating impacts will follow CDFG agreement of delineations and an agreement on impact assessment. Once complete, the Applicant will look at a variety of mitigation options, including but not limited to in-lieu fees, land acquisition, protection of off-site lands and/or habitat creation or restoration.

Data Request:

166. Please identify all areas that would be graded for construction of the proposed project. Illustrate these areas on a map.

Response:

Attached are two maps (Attachments DR 166-1 and DR 166-2). The first map (Attachment DR 166-1) shows the proposed project area including the access roads and temporary Construction logistics area. The second map (Attachment DR 166-2) shows the temporary and permanent disturbances affected by the proposed 220KV Gen-tie transmission line, this also map shows the temporary construction lay-down and cable pulling/stringing areas.

The total temporary disturbed area for the Project is mainly attributed to approximately 85 acres throughout the solar field that will be used for trenching for the power and communication service cables that are associated with the Solar Field Integrated Control System (SFINCS) which will control all the Heliostats as well as other ancillary equipment such as calibration cameras, Met stations and Access points. In the case of a wired heliostat ctrl system the cables from the Access points (or CPDU) to each individual heliostat will be run on the surface of the ground and thus will not be a disturbance.

The applicant estimates the total temporary disturbance area to be approximately 248 acres. This includes the Solar field mentioned above, the Construction Logistics Area (CLA) located east of the WAPA transmission line, the access roads and 33Kv overhead electrical service, plus an additional approximately 30 acres for the Gen-tie line construction lay-down and cable stringing/pulling areas.

The area of Permanent Disturbance totals approximately 636 acres on the main project site, and access roads. This number includes all permanent features associated with the site access roads, Solar Fields, the Power Blocks, and Common Facilities areas. In addition to the 636 acres above, an additional approximately 16 acres will be attributed to the Gen-tie, its service road and pole structure foundations.

Biological Resources (Nos. 155-167)

Data Request:

167. State whether any underground infrastructure would be required to operate the heliostats. If underground infrastructure is proposed, please describe the proposed installation methodology, including trench dimensions. Illustrate any areas of proposed ground disturbance necessary for operation of the heliostats on a map and provide drawings of representative trenches or other ground disturbance, including any berms or other grading to divert runoff.

Response:

On June 8, 2012, Applicant provided notice for more time to provide a response to this Data Request. Applicant will require until July 20, 2012, to respond to this data request.

Soil and Water Resources (No. 168)

Data Request:

168. Please provide documentation showing that the applicant has paid the Colorado River RWQCB the necessary fee for them to complete their review of the Report of Waste Discharge and prepare the Waste Discharge requirements for the evaporation pond monitoring and mitigation.

Response:

Provided as Attachment DR 168-1 is a copy of the Application Fee Check made out to the Colorado River RWQCB for their review of the Report of Waste Discharge, and to allow the Board to begin preparation of the Waste Discharge Requirements (WDR) for the evaporation pond monitoring and mitigation (if any). The check and the Application were sent to the RWQCB on June 14, 2012.

Traffic and Transportation–Glint and Glare (No. 169)

Data Request:

169. Please provide accurate estimates for both irradiance (W/m^2) and luminance (cd/m^2) for the following conditions:

a. An observer on the ground viewing the tower SRSGs (without protective eyewear) during nominal plant operational conditions of maximum power generation for viewing distances of 200, 500, 2000, 5000, and 20000 meters.

b. At start-up or when the standby ring is heavily populated with heliostat reflections in the standby position, an airborne observer at viewing distances of 1000, 5000, 10000, and 20000 meters with respect to the tower SRSG, and at a slant angle sufficient to reside within the heliostat reflected zone to receive direct reflections from one or more of the heliostat reflected beams resident in the standby ring.

Response:

The information requested in this data request was previously provided by Applicant to Staff in response to Data Requests #143 and #144. Please refer to Applicant's response docketed with the CEC on May 23, 2012.

Alternatives (Nos. 170-171)

Data Request:

170. Please provide a discussion of pertinent contractual agreements in the applicant's PPA with SCE that would prohibit the consideration or justify the dismissal of alternatives identified in the Application for Certification (AFC).

Response:

The Power Purchase Agreement ("PPA") between BSE and SCE is a legally binding contractual agreement that requires BSE to deliver to SCE a specified quantity of energy from a specified type of generating facility over a specified term. Any material deviation from the quantity of energy, the type of facility used to generate the energy or the period of delivery would constitute a default and potentially subject BSE to substantial financial penalties.

[redacted]

[redacted]

[redacted]

[redacted] The BrightSource LPT design – and solar thermal/concentrating solar power technologies in general – are widely recognized as having operational and reliability attributes that differentiate them from other technologies like PV. These attributes (described in more detail below) together with the express terms of the PPA that require the use of this technology, prohibit the consideration and justify the dismissal of alternatives identified in the Application for Certification (AFC).

The CPUC has recognized that solar thermal has a higher on-peak availability factor than PV systems -- possibly 10% or more higher as shown in Table 1 below. This essentially means that the buyer of the LPT design plant would need to purchase less back-up generation by at least 10% for Resource Adequacy than for a similarly sized and situated PV project.

Table 1 - CPUC generic estimates of on-peak availability factors[4]

Resource Type	On-Peak Availability Factor
Biomass	66%
Geothermal	72%
Wind	16%
Solar PV	65% for Tracking Systems 51% for Fixed-Tilt Systems
Solar Thermal	77% (Range of 71% - 87%)

Moreover, there are a range of other attributes provided by solar thermal that are known to be desirable from an operational perspective, and cannot be provided by PV. However, these attributes have values that are difficult to quantify monetarily at present (i.e., in terms of $/MWh), so are described here qualitatively. The LPT plants utilize synchronous generators, providing similar reliability and operational benefits to the system as conventional power plants

[4] See CPUC R.10-05-006, Planning Standards for Renewable Resources (last updated 2/2011), available at: http://docs.cpuc.ca.gov/efile/RULINGS/130670.pdf

at no additional costs. When the LPT plants are on-line, these benefits include reactive power support, dynamic voltage support, voltage control, some degree of inertia response, primary frequency control, frequency and voltage ride-through, small signal stability damping, and the ability to mitigate Sub-Synchronous Resonance ("SSR"). Hence, they provide attributes that bring system benefits, which other technology types (specifically PV) fail to offer.

A number of recent studies have begun to catalogue the regional power system requirements for integration of variable energy resources to maintain system frequency response (See references to GE Energy/NREL 2010; LBNL 2010; GE Energy/CAISO 2011 below). These include numerous measures, and clearly there are significant costs to be distributed over power market buyers and loads. While we cannot offer a specific cost that is additional to the costs we have already discussed, qualitatively any less variable and more controllable renewable resource, such as the LPT technology, will mitigate some of those costs, and can potentially significantly offset them.

References:

- GE Energy/National Renewable Energy Laboratory (NREL), May 2010, Western Wind and Solar Study, NREL, Golden, Colorado.
- GE Energy, California ISO Frequency Response Study, Final Draft, November 9, 2011, available at http://www.caiso.com/Documents/Frequency%20response%20study%20report.
- Lawrence Berkeley National Laboratory (LBNL), Use of Frequency Response Metrics to Assess the Planning and Operating Requirements for Reliable Integration of Variable Renewable Generation, December 2010, available at http://www.ferc.gov/industries/electric/indus-act/reliability/frequencyresponsemetrics-report.pdf.

Data Request:

171. Please provide a copy of the actual PPA, with confidential information redacted as necessary. Alternatively, staff would support a request that the filing be treated as confidential.

Response:

Applicant's confidential response to Data Requests Nos. 26 and 27 is an excerpt from the actual PPA Applicant executed with SCE. Applicant has an obligation to provide true and accurate information to the Commission and staff. Section 2505(g) of the Commission's regulations requires the Applicant to "certify under penalty of perjury that the information contained in [the] application for confidential designation is true, correct and complete to the best of my knowledge." The portions of Applicant's PPA submitted in response to Data Requests 26, 27 and 170 are accurate excerpts from Applicant's legally executed PPA with SCE.

Socioeconomics (Nos. 172)

Data Request:

172. Please provide an updated Construction Craft Resources Survey.

Response:

On June 8, 2012, Applicant provided notice for more time to provide a response to this Data Request. Applicant will require until January 31, 2013, to respond to this data request.

D R A F T

DRAFT RIO MESA SOLAR DESERT KIT FOX MANAGEMENT PLAN

Prepared for

BrightSource Energy, Inc.
1999 Harrison St., Suite 2150
Oakland, CA 94612

URS Project No. 27652105

June 2012

URS

4225 Executive Square, Suite 1600
La Jolla, CA 92037
858.812.9292
Fax: 858.812.9293

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Figure 1 Kit Fox Burrows Observed During Biological Surveys of the Rio Mesa Solar Electric Generating Facility
Figure 2 Kit Fox Burrows in Relation to the Proposed Fenced Development Area of the Rio Mesa Solar Electric Generating Facility

SECTION 1 INTRODUCTION

This management plan for desert kit fox (*Vulpes macrotis macrotis*; Mercure et al. 1993) at the Rio Mesa Solar site describes the proposed preconstruction surveys, passive relocation and other management measures, and construction and operational guidelines.

An extensive kit fox burrow survey and mapping effort was conducted at the Rio Mesa Solar site in 2011. All kit fox burrows within the 2011 project assessment area and within a 500-foot buffer were mapped and their status documented. These burrows are shown in Figure 1. During the 2011 surveys, 193 desert kit fox burrows or burrow complexes were observed within the original Biological Study Area (BSA), of which 67 are within the current proposed fenced development area. Because numerous burrows occur within the home range of each single female, not all burrows are active at the same time; only 15 of the detected burrows appeared to be active or potentially active based on the presence of fresh tracks and/or scat.

Kit foxes as a species are solitary animals except during the breeding season. They do not maintain territories that they defend against other foxes, but they do have home ranges within which they conduct their regular activities. A female visits the burrows in her home range in September and October, selects one for birthing, and cleans it. Females usually select a birthing den complex that is three to four kilometers from the nearest neighbor to ensure a good hunting territory. The selected den is cleaned and pups are born in February or March and are weaned by June. Den changes are frequent during the summer when pups are being fed. At three to four months the pups begin to forage with the parents. In October the pups leave their parents' home range. Young foxes may travel long distances (30 or more kilometers) before settling down. Use of burrows outside the breeding season includes sheltering from sun and heat during the day and hiding from potential predators such as coyotes. Adult kit fox ranges usually cover one to two square miles (Morrell 1972). It should be noted that most information on the life history of kit foxes comes from studies of the California and federally Endangered San Joaquin kit fox, *Vulpes macrotis mutica*.

The desert kit fox is not a State or federally listed species, but is listed under Fish & Game Trapping Regulations (CCR 14 §460) as prohibited from "take" as defined by Fish & Game Code §86. California Fish and Game Code §86 defines take as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, capture, or kill," This definition does not include harassment as take. The California Department of Fish and Game (CDFG) does not issue Incidental Take Permits or Memoranda of Understanding to permit the capture or handling of desert kit fox. For the purposes of this management plan, passive relocation is consistent with Fish & Game regulations.

SECTION 2 PROJECT DESCRIPTION

The Rio Mesa Solar site is located east of State Route 78, approximately 13 miles southwest of the City of Blythe in Riverside County, California (Figure 1 inset). The site lies between the Mule Mountains to the west and the Lower Colorado River Valley to the east, on the Palo Verde Mesa within the Colorado Desert region of the Sonoran Desert.

As of May 2012, the Project has been redesigned and reduced in scope to consist of two solar concentration thermal power plants. Each plant will contain a solar power boiler on a 760-foot-tall tower and a surrounding field of heliostats (mirrors) that will focus solar energy on the boiler. A common area will contain combined administration, control, and maintenance facilities. Each plant will have a nominal output of 250 megawatts. The Project will be executed in two phases. The total project area will be approximately 5,955 acres including access roads and gen-tie line. The plants will be connected to the new Southern California Edison Colorado River Substation to the north via a common overhead 220 kilovolt generator tie-line (gen-tie line). The BSA for the Project consists of the main project site where the two solar plants, common area, and construction logistics area are proposed, an approximately 1,794 acre area to the north that was the location of a previously proposed third plant (which is not now planned for the development), a 500 foot wide buffer around the original three-plant project site, and a gen-tie line along existing transmission lines that extend to the new Colorado River Substation (plus a 250-foot buffer), and access areas from State Route 78 via Bradshaw Trail and 34th Avenue (plus a 100-foot buffer).

SECTION 3 PROPOSED MANAGEMENT MEASURES

The proposed management measures consist of preconstruction surveys, passive relocation, post-relocation monitoring and reporting, a plan to relocate returning animals, and construction and operational guidelines.

3.1 PRECONSTRUCTION SURVEYS

CDFG-approved biologists will conduct preconstruction surveys to verify kit fox burrow locations in the proposed fenced development area between 14 and 30 days before initiation of ground disturbance. The kit fox preconstruction survey will be part of the desert tortoise and burrowing owl preconstruction surveys already planned for the fenced development area, and evaluation of the documented kit fox burrows will be included in these preconstruction surveys.

During these surveys, kit fox burrows will be classified as inactive, potentially active or definitely active based on the presence and age of sign such as tracks and scat around the burrow. Burrows classified as potentially active or active will be monitored for a period of three nights through the use of a tracking medium such as diatomaceous earth at the entrances of each burrow. Fiber-optic scopes may also be used to view the interior of burrows if deemed appropriate. The final numbers and locations of active kit fox burrows will be determined during this preconstruction survey.

3.2 PASSIVE RELOCATION

The goal of this passive relocation effort is to compel any desert kit foxes present within the proposed fenced development area to leave this area, and to immediately erect the perimeter fence to prevent their return. If any foxes are detected in the proposed fenced development area during burrow monitoring (see Section 3.1 above), biologists will employ passive relocation techniques.

Passive relocation is intended to force the foxes to leave their burrows and the project area without capturing or handling them. It requires careful planning and implementation to avoid direct mortality to pups and indirect mortality to displaced juveniles and adults. In addition, this procedure has the potential to worsen the regional canine distemper outbreak by raising stress levels and by forcing the movement of potentially infected foxes into new areas where the disease may spread. However, passive relocation avoids take of desert kit fox due to vehicle strikes or entrapment within burrows, during construction and operation.

3.2.1 Passive relocation methods

Passive relocation will consist of techniques to exclude foxes from their burrows, such as one-way doors that physically prevent foxes from re-entering the burrows, or application of coyote urine at burrow entrances to frighten the foxes away. Once the foxes are out of the burrows, the burrows will be excavated and collapsed. All unoccupied burrows will also be excavated and collapsed. Excavation will be undertaken with hand tools to avoid harming any animals left in the burrow. Once the burrows are excavated, they will be backfilled and compacted.

After all burrows within the proposed development area are collapsed, fencing will be erected around the perimeter of the development area (see Figure 2). This fencing is intended to prevent desert tortoise and kit fox from returning to the development area. Biologists will monitor the proposed development area periodically between completion of burrow destruction and completion of fencing installation to ensure that foxes do not return to the development area.

3.2.2 Offsite suitable habitat evaluation

Once the foxes are excluded from the proposed fenced development area, they will need to find new burrows and suitable habitat elsewhere. As part of this management plan, habitat on surrounding lands has been evaluated for suitability for displaced desert kit foxes.

Because kit fox burrow surveys were conducted over the entirety of the original project area, which was substantially larger than the current project area, and the fenced project development area is substantially smaller than the entire assessment area, many of the mapped burrows are outside the proposed fenced development area. The burrows within the surveyed area but outside the fenced development area, shown in Figure 2, provide a quantitative sample of burrow availability for kit foxes relocated from the fenced development area. This sample indicates that approximately 142 desert kit fox burrows occur on 7,591 acres of suitable habitat outside the proposed fenced development area.

A qualitative evaluation of suitable habitat availability within 10 miles of the fenced project development area was undertaken by reviewing adjacent land use, habitat types, and elevation on aerial photography of the project area, using GIS capabilities. Based on this review, it appears that a 10 mile buffer around the site includes roughly 160,000 acres of land suitable for kit fox habitation (undeveloped, non-mountainous natural habitat).

Kit foxes are thought to have ranges of one to two square miles, with considerable overlap of home ranges such that foxes may occur at densities of 0.5 to 1.25 foxes per square mile (CDFG 2012). Based on the documented occurrence of approximately two active, two potentially active, and 63 inactive burrows within the fenced project area (3,866 acres), and approximately five active, six potentially active, and 131 inactive burrows in the surveyed area outside the fenced project area (7,591 acres), as well as the presence of large areas of suitable habitat around the project site, it appears possible that all relocated kit foxes would be able to find burrows within ten miles of the fenced development area, which is less than the 30 kilometer (19 mile) dispersal distance of young kit foxes; and that this plan will achieve its goal of excluding kit foxes from the development area.

Because the 2011 surveys revealed numerous kit fox burrows in the site vicinity that appear to be suitable for relocating foxes, creation of artificial burrows (potential ground-disturbing activity associated with the relocation) is not anticipated to be necessary and is not proposed.

3.2.3 Scheduling of the passive relocation

The passive relocation effort will be scheduled to minimize impacts to the kit foxes, especially young foxes and pregnant foxes. Because most kit foxes are born between February and April, and are weaned at four to five months (CDFG 2012), relocation should occur between September and January. Fall relocation will also reduce heat stress as the kit foxes move to new territory.

3.3 MONITORING AND REPORTING PROGRAM

A monitoring and reporting program will evaluate the success of the desert kit fox exclusion effort. This program will consist monitoring for the presence of kit foxes in conjunction with other duties, and submitting letter report(s) to CDFG within one month of detection if any kit foxes are detected within the fenced development area.

3.4 PLAN TO RELOCATE RETURNING KIT FOXES

If monitoring detects kit foxes occupying the site, these foxes will be actively relocated through live-trapping and released outside the fence line. Trapping will be performed by a qualified professional in such a way as to minimize stress to the foxes. An effort will be made to determine how the foxes entered the fenced development area, and remedial measures such as fence repair will be implemented to prevent it from reoccurring.

3.5 DEAD OR SICK KIT FOX NOTIFICATION AND PROCEDURES

If a dead or sick fox is observed on the project site it will be immediately reported to the project biologist and the project biologist will notify the Department of Fish and Game within 24 hours.

SECTION 4 CONSTRUCTION AND OPERATIONAL GUIDELINES

The following construction and operational guidelines will be implemented to minimize take of desert kit fox and properly handle any cases of injured, sick, or dead kit foxes onsite.

- Construction personnel will be educated about the desert kit fox and what to do if one is found.
- If a live or dead kit fox (or possible kit fox) is found within the fenced development area during construction, the finder will notify the construction manager immediately.
- The construction manager will notify the project biologist immediately and take steps to ensure that onsite work will not harm the fox, such as establishing a perimeter around the fox within which no motor vehicles will operate.
- The project biologist will contact CDFG within 48 hours with details of the finding, and arrange for passive or active relocation for a live fox to outside the construction perimeter, or testing of an apparently sick fox or removal of a dead fox.
- Project vehicles will maintain a 20-mph speed limit on the Rio Mesa site.
- Gates into the fenced proposed development area will be kept closed at night to prevent foxes from re-entering the development area.

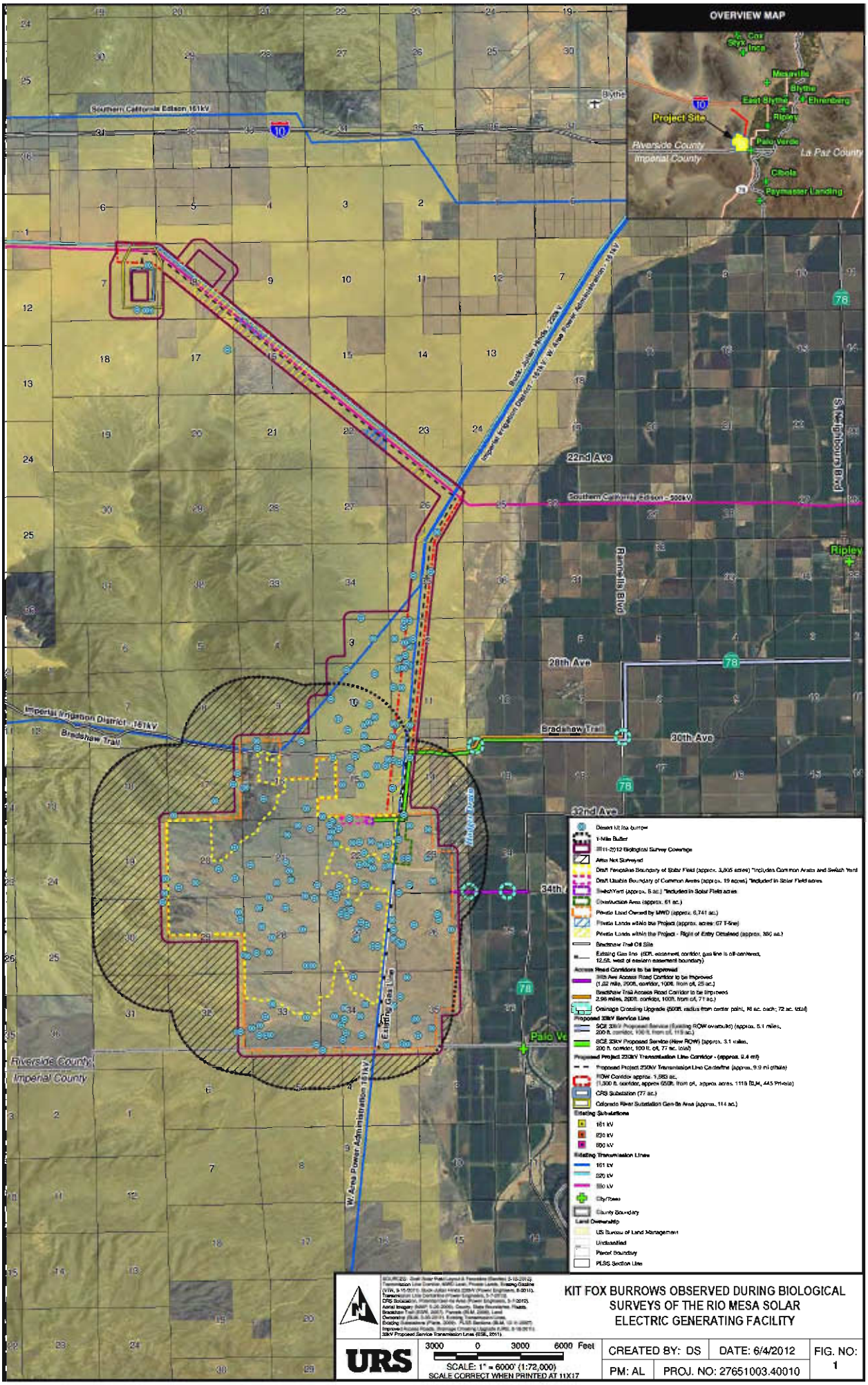
SECTION 5 REFERENCES

California Department of Fish and Game (CDFG). 2012. Online Information. http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=2565&inline=1

Mercure, A.K., K. Ralls, K.P. Koepfli, and R.B. Wayne. 1993. Genetic subdivisions among small canids; mitochondrial DNA differentiation of swift, kit, and arctic foxes. Evolution 47:1313-1328.

Morrell, S. 1972. Life history of the San Joaquin kit fox. Calif. Fish and Game. 58:162-174.

O'Farrell, T.P., and L. Gilbertson. 1979. Ecological life history of the desert kit fox in the Mojave Desert of southern California. USDI BLM. Riverside. Draft Final Rep. 95pp



KIT FOX BURROWS OBSERVED DURING BIOLOGICAL SURVEYS OF THE RIO MESA SOLAR ELECTRIC GENERATING FACILITY

URS

3000 0 3000 6000 Feet

SCALE: 1" = 6000' (1:72,000)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: DS	DATE: 6/4/2012	FIG. NO: 1
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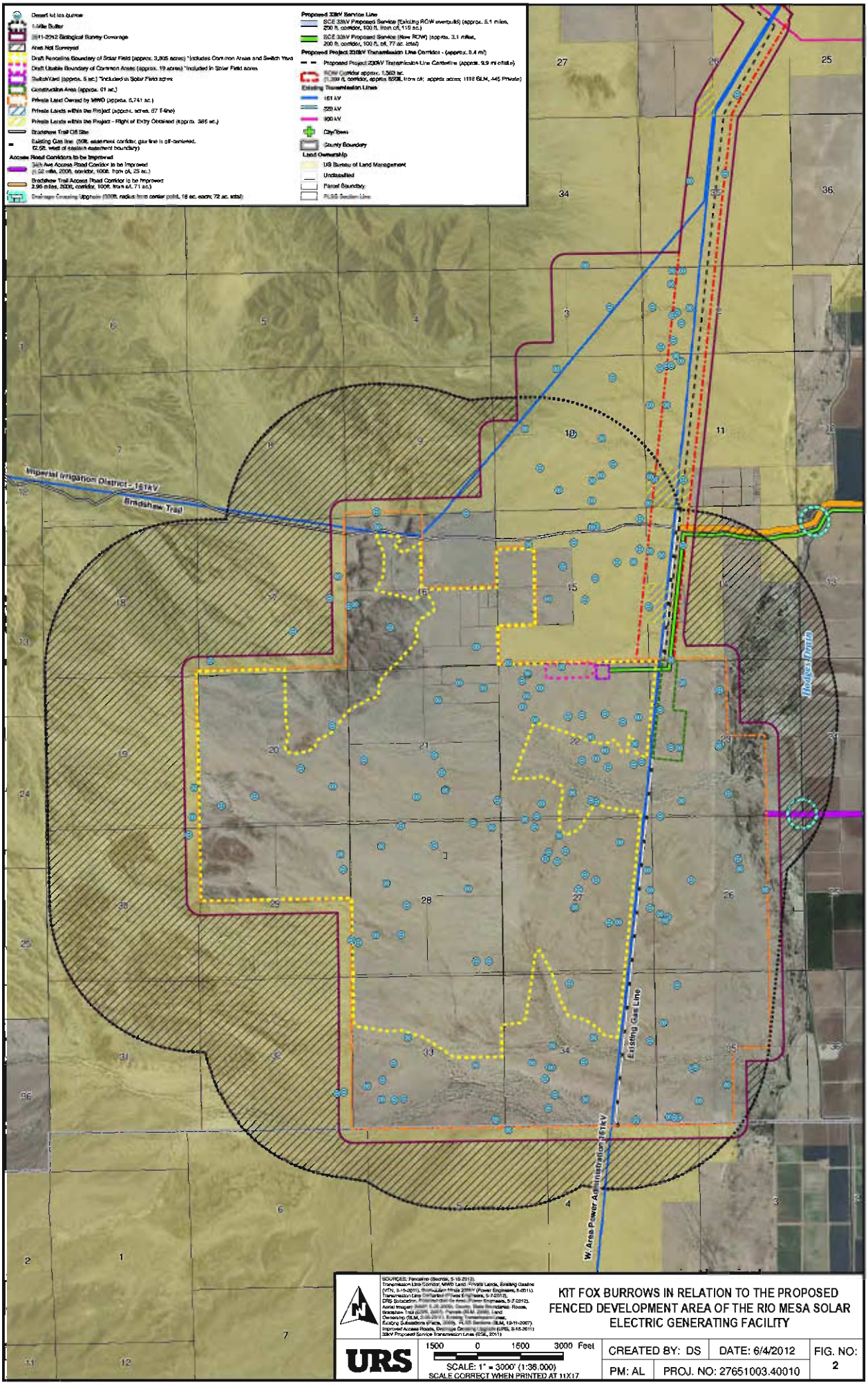

SOURCES: Fenceline (Sachse, 5-15-2012); Transmission Line Corridor, MWD Land, Private Lands, Existing Gasline (VTN, 3-15-2011); Transmission Lines 230kV (Power Engineers, 5-6-2011); Transmission Line Centerline (Power Engineers, 5-7-2012); DRS Substation, Project Boundary area (Power Engineers, 5-7-2012); Aerial Imagery (NAIP 1-28-2009); County, State Boundaries, Roads, Bradshaw Trail (ESRI, 2007); Parcels (BLM, 2008); Land Ownership (BLM, 3-15-2011); Existing Transmission Lines, Existing Substations (Place, 2009); PLSS Sections (BLM, 12-11-2007); Improved Access Roads, Drainage Crossing Upgrade (URS, 8-15-2011); 33kV Proposed Service Transmission Lines (ESE, 2011)

KIT FOX BURROWS IN RELATION TO THE PROPOSED FENCED DEVELOPMENT AREA OF THE RIO MESA SOLAR ELECTRIC GENERATING FACILITY

URS

1500 0 1500 3000 Feet

SCALE: 1" = 3000' (1:36,000)

SCALE CORRECT WHEN PRINTED AT 11X17

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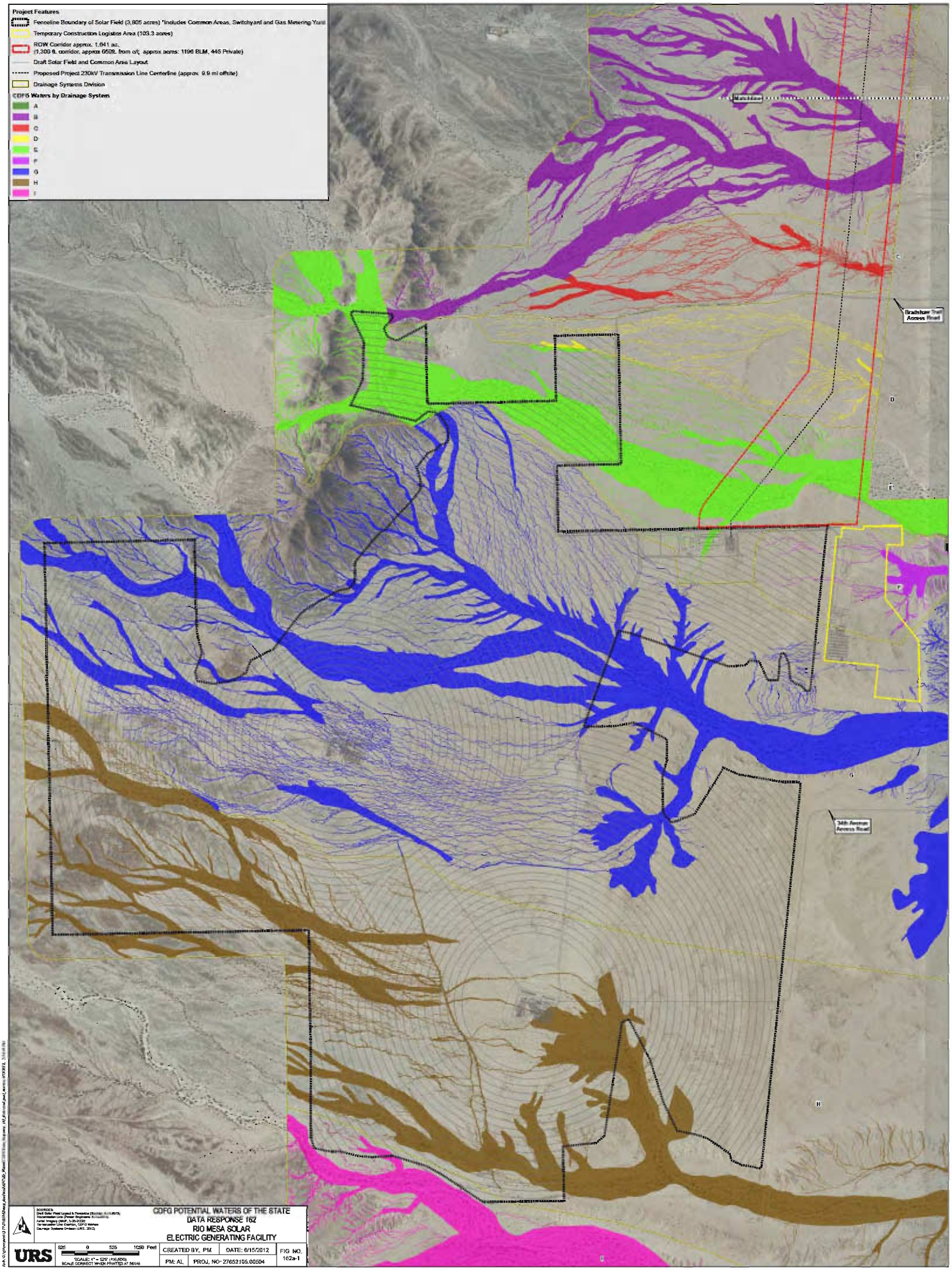

Project Features
Fenceline Boundary of Solar Field (3,805 acres) *Includes Common Areas, Switchyard and Gas Metering Yard
Temporary Construction Logistics Area (103.3 acres)
ROW Corridor approx. 1,641 ac.
(1,300 ft. corridor, approx 650ft. from c/l; approx acres: 1196 BLM, 445 Private)
Draft Solar Field and Common Area Layout
Proposed Project 230kV Transmission Line Centerline (approx. 9.9 mi offsite)
Drainage Systems Division
CDFG Waters by Drainage System
A
B
C
D
E
F
G
H
I
Bradshaw Trail Access Road
34th Avenue Access Road
SOURCES
Draft Solar Field Layout & Fenceline (Rio Mesa, 6/15/2012)
Transmission Line (Power Engineers, 5/14/2012)
Aerial Imagery (NAIP, 5-25-2010)
Transmission Line Centerline, CDFG Waters
Drainage Systems Division (URS, 2012)
CDFG POTENTIAL WATERS OF THE STATE
DATA RESPONSE 162
RIO MESA SOLAR
ELECTRIC GENERATING FACILITY
URS
525 0 525 1050 Feet
SCALE: 1" = 525' (1:6,600)
SCALE CORRECT WHEN PRINTED AT 36X48
CREATED BY: PM
DATE: 6/15/2012
FIG. NO. 162a-1
PM: AL
PROJ. NO: 27652105.00504

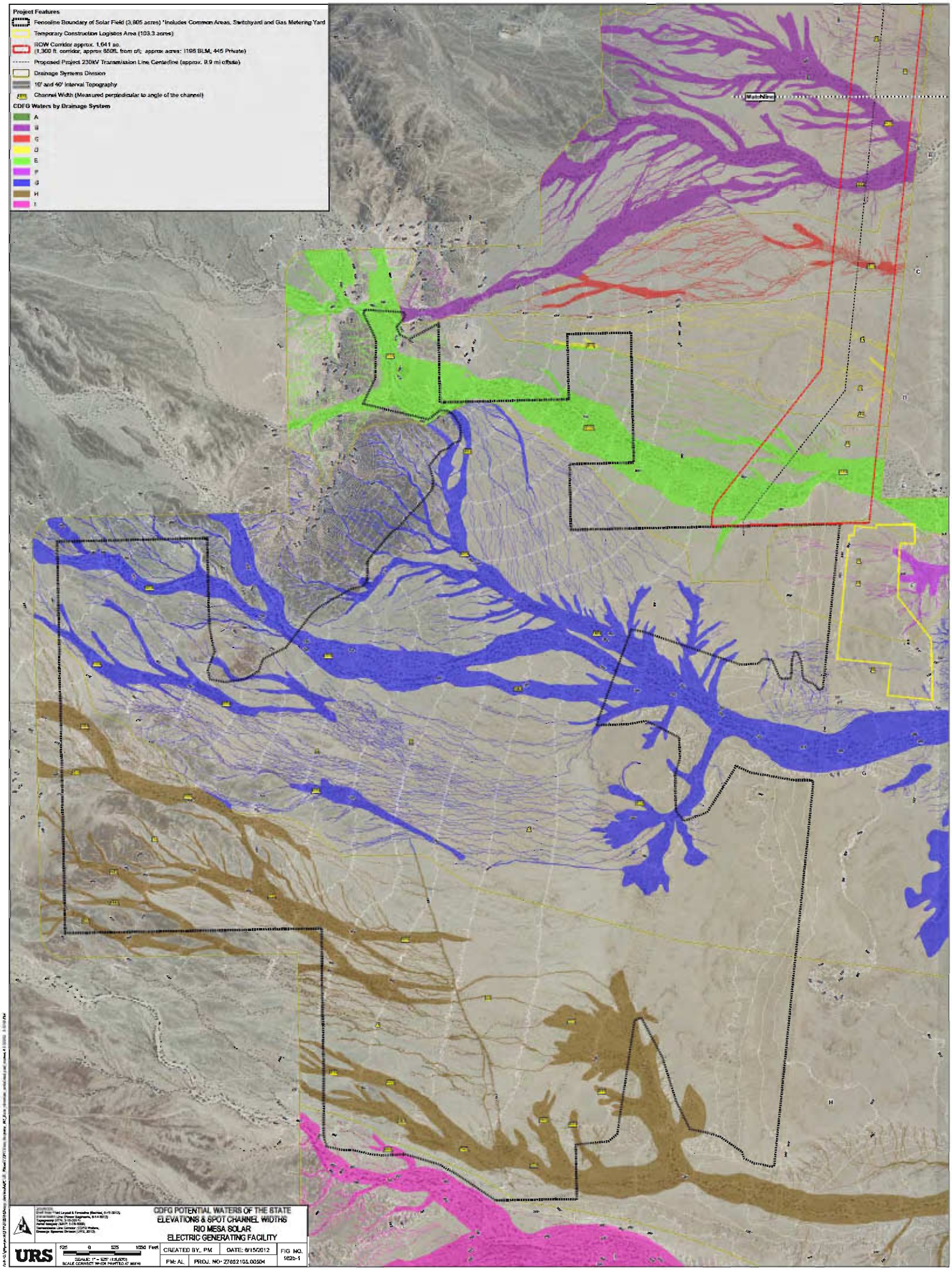
CDFG POTENTIAL WATERS OF THE STATE
DATA RESPONSE 162
RIO MESA SOLAR
ELECTRIC GENERATING FACILITY

URS

600 0 600 1200 Feet

SCALE: 1" = 600' (1:7,200)
SCALE CORRECT WHEN PRINTED AT 36x48

CREATED BY: PM	DATE: 6/15/2012	FIG. NO
PM: AL	PROJ. NO: 27662196.00504	162a-2


Project Features
Fenceline Boundary of Solar Field (3,805 acres) *Includes Common Areas, Switchyard and Gas Metering Yard
Temporary Construction Logistics Area (103.3 acres)
ROW Corridor approx. 1,641 ac.
(1,300 ft. corridor; approx 850ft. from c/l; approx acres: 1196 BLM, 445 Private)
Proposed Project 230kV Transmission Line Centerline (approx. 9.9 mi offsite)
Drainage Systems Division
10' and 40' Interval Topography
Channel Width (Measured perpendicular to angle of the channel)
CDFG Waters by Drainage System
A
B
C
D
E
F
G
H
I
MatchLine
CDFG POTENTIAL WATERS OF THE STATE
ELEVATIONS & SPOT CHANNEL WIDTHS
RIO MESA SOLAR
ELECTRIC GENERATING FACILITY
URS
525 0 525 1050 Feet
SCALE: 1" = 525' (1:6,000)
SCALE CORRECT WHEN PRINTED AT 36X48
CREATED BY: PM
DATE: 6/15/2012
FIG. NO. 1820-1
PM: AL
PROJ. NO: 27662105.00504

CDFG POTENTIAL WATERS OF THE STATE
ELEVATIONS & SPOT CHANNEL WIDTHS
RIO MESA SOLAR
ELECTRIC GENERATING FACILITY

NOTE: Extent of map covers all CDFG waters mapped within Transmission line corridor and Substation.

URS

600 0 600 1200 Feet

SCALE: 1" = 600' (1:7,200)
SCALE CORRECT WHEN PRINTED AT 36X48

CREATED BY: PM	DATE: 8/15/2012	FIG NO: 182b-2
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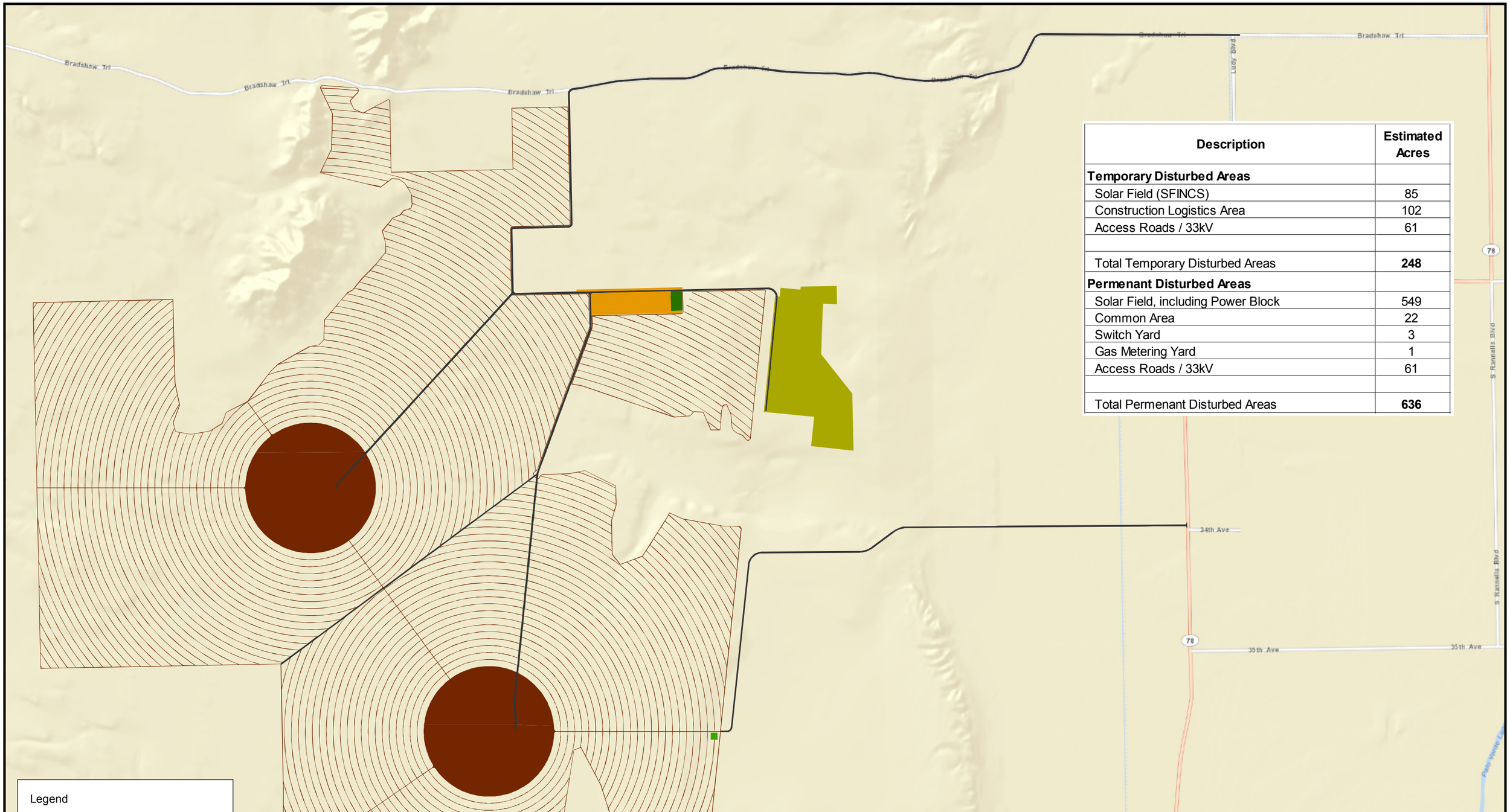


Description	Estimated Acres
Temporary Disturbed Areas	
Solar Field (SFINCS)	85
Construction Logistics Area	102
Access Roads / 33kV	61
Total Temporary Disturbed Areas	**248**
Permenant Disturbed Areas	
Solar Field, including Power Block	549
Common Area	22
Switch Yard	3
Gas Metering Yard	1
Access Roads / 33kV	61
Total Permenant Disturbed Areas	**636**

Rio Mesa Solar - Disturbed Areas

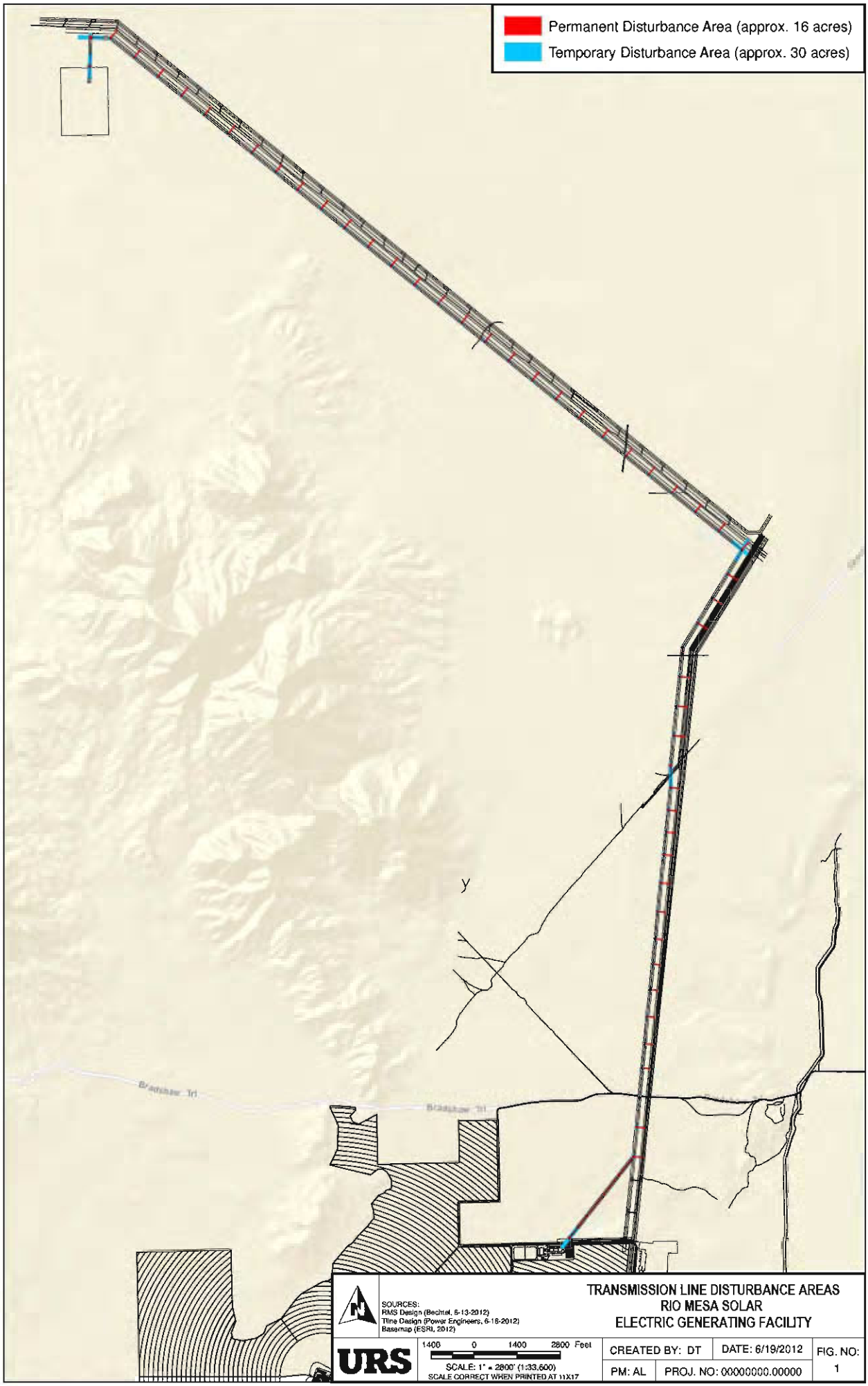
N
W E
S

Scale: 1:24,000

0 0.25 0.5 Miles

Scale correct when printed at 11x17
This map is for planning purposes only. The information herein was compled from multiple sources and is considered to be reliable, however no representation is made concerning the accuracy of the data.

Project:	Rio Mesa Solar (RMS)	
Date:	June 19, 2012	Figure No:
Revision:	C	1
Prepared By:	NS	



SOURCES:
RMS Design (Bechtel, 5-13-2012)
Tline Design (Power Engineers, 6-18-2012)
Basemap (ESRI, 2012)

TRANSMISSION LINE DISTURBANCE AREAS
RIO MESA SOLAR
ELECTRIC GENERATING FACILITY

URS

1400 0 1400 2800 Feet
SCALE: 1" = 2800' (1:33,600)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: DT	DATE: 6/19/2012	FIG. NO:
PM: AL	PROJ. NO: 00000000.00000	1

14114

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

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11-24-1210

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06/14/12

PAY TO THE ORDER OF
WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN RANGE

$ **18,158.31

Eighteen Thousand One Hundred Fifty-Eight Dollars And Thirty-One Cents**********DOLLARS*

Security features. Details on back.

Water Quality Control Board Colorado River Basin Range
73-720 Fred Waring Drive
Sutie #100
Palm Desert,CA 92260

MEMO

AUTHORIZED SIGNATURE

⑈014114⑈ ⑆121000248⑆ 4121436612⑈

BRIGHTSOURCE ENERGY, INC.

14114

Supplier: Water Quality Control Board Colorado River Basin Range | Supplier #: 13569 | Check #: 14114 | Check Date: 06/14/12

Invoice #	Invoice Date	Description	Discount	Payment
CCkreq061412	06/14/12		.00	18,158.31
		Invoice Subtotal		18,158.31
		Check Amount:		**18,158.31

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 *RIO MESA SOLAR ELECTRIC GENERATING FACILITY*

DOCKET NO. 11-AFC-04
PROOF OF SERVICE
(Revised 6/4/12)

APPLICANTS' AGENTS

BrightSource Energy, Inc.
Todd Stewart, Senior Director
Project Development
1999 Harrison Street, Suite 2150
Oakland, CA 94612
tstewart@brightsourceenergy.com

BrightSource Energy, Inc.
Michelle Farley
1999 Harrison Street, Suite 2150
Oakland, CA 94612
mfarley@brightsourceenergy.com

BrightSource Energy, Inc.
Brad DeJean
1999 Harrison Street, Suite 2150
Oakland, CA 94612
e-mail service preferred
bdejean@brightsourceenergy.com

APPLICANTS' CONSULTANTS

Grenier and Associates, Inc.
Andrea Grenier
1420 E. Roseville Parkway
Suite 140-377
Roseville, CA 95661
e-mail service preferred
andrea@agrenier.com

URS Corporation
Angela Leiba
4225 Executive Square, Suite 1600
La Jolla, CA 92037
angela_leiba@urscorp.com

COUNSEL FOR APPLICANTS

Ellison, Schneider, & Harris
Christopher T. Ellison
Brian S. Biering
2600 Capitol Avenue, Suite 400
Sacramento, CA 95816-5905
cte@eslawfirm.com
bsb@eslawfirm.com

INTERESTED AGENCIES

Mojave Desert AQMD
Chris Anderson, Air Quality Engineer
14306 Park Avenue
Victorville, CA 92392-2310
canderson@mdaqmd.ca.gov

California ISO
e-mail service preferred
e-recipient@caiso.com

Bureau of Land Management
Cedric Perry
Lynnette Elser
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553
cperry@blm.gov
lelser@blm.gov

*Katherine Lind
*Tiffany North
Office of Riverside County Counsel
County of Riverside
3960 Orange Street, Suite 500
Riverside, CA 92501
e-mail service preferred
klind@co.riverside.ca.us
tnorth@co.riverside.ca.us

INTERVENORS

Center for Biological Diversity
Lisa T. Belenky, Senior Attorney
351 California Street, Suite 600
San Francisco, CA 94104
e-mail service preferred
lbelenky@biologicaldiversity.org

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

*indicates change

ENERGY COMMISSION – DECISIONMAKERS

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

KAREN DOUGLAS
Commissioner and Associate Member
e-mail service preferred
karen.douglas@energy.ca.gov

Kourtney Vaccaro
Hearing Adviser
e-mail service preferred
kourtney.vaccaro@energy.ca.gov

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

Galen Lemei
Advisor to Associate Member
e-mail service preferred
galen.lemei@energy.ca.gov

Jennifer Nelson
Advisor to Associate Member
e-mail service preferred
jennifer.nelson@energy.ca.gov

ENERGY COMMISSION STAFF

Pierre Martinez
Project Manager
pierre.martinez@energy.ca.gov

Lisa DeCarlo
Staff Counsel
lisa.decarlo@energy.ca.gov

Eileen Allen
Commissioners' Technical
Advisor for Facility Siting
e-mail service preferred
eileen.allen@energy.ca.gov

ENERGY COMMISSION – PUBLIC ADVISER

Jennifer Jennings
Public Adviser's Office
e-mail service preferred
publicadviser@energy.state.ca.us

*indicates change

DECLARATION OF SERVICE

I, Andrew Martin, declare that on June 19, 2012, I served and filed a copy of the attached document Applicant's Responses to Data Requests, Set 2A, dated June 19, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: http://www.energy.ca.gov/sitingcases/riomesa/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;

X 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 electronic copies to the e-mail address below (preferred method); *OR*

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

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

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

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

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

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

Original Signed by Andrew Martin

*indicates change

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

TO: *All Parties* *Date: June 5, 2012*

RE: ***RIO MESA SOLAR ELECTRIC GENERATING FACILITY***
Proof of Service List
Docket No. 11-AFC-04

Attached is the ***newly revised*** Proof of Service List for the above-mentioned project, current as of June 4, 2012. Please pay particular attention to the ***new*** filing instructions.

Energy Commission regulations (Cal. Code Regs., tit. 20, § 1210) require, in addition to any electronic service, that a paper copy be served in person or by first class mail except where a party requests to receive an electronic copy when one is available. Individuals and groups on the Proof of Service list who prefer to receive filings by e-mail and do not require a paper copy shall inform the Hearing Adviser assigned to the proceeding.

The Proof of Service list for this matter will delineate those individuals and groups and it is sufficient to serve those individuals with an e-mailed copy only. Those not so delineated must be served with a paper copy in addition to any e-mailed copy that the filing party chooses to provide. Signatures may be indicated on the electronic copy by **"*Original Signed By*"** or similar words. The original signed copy or an electronic copy shall be filed with the Energy Commission's Dockets Unit.

Unless otherwise specified in a regulation, all materials filed with the Commission must also be filed with the Docket Unit. (Cal. Code Regs., tit. 20, § 1209(d).) Some regulations require filing with the Commission's Chief Counsel instead of the Docket Unit. For example, Section 1720 requires a petition for reconsideration to be filed with the Chief Counsel and served on the parties. Service on the attorney representing Commission staff does not satisfy this requirement. This Proof of Service form is not appropriate for use when filing a document with the Chief Counsel under Title 20, sections 1231 (Complaint and Request for Investigation) or 2506 (Petition for Inspection or Copying of Confidential Records). The Public Advisor can answer any questions related to filing under these sections.

New addition(s) to the Proof of Service are indicated in **bold font** and marked with an asterisk (*). Additionally, if two or more persons are listed on a Proof of Service List with a single address, only one physical copy of a document need be mailed to the address.

Use this newly revised list for all future filings and submittals. This Proof of Service List will also be available on the Commission's Project Web Site at:

[http://www.energy.ca.gov/sitingcases/riomesa/index.html]

Please review the information and contact me at maggie.read@energy.ca.gov or (916) 654-3893, if you would like to be removed from the Proof of Service or if there are any changes to your contact information.

Maggie Read
Hearing Adviser's Office