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09-AFC-6	
DATE	JAN 22 2010
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January 22, 2010

Mr. Alan Solomon
Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

RE: Responses for Data Requests Set 1 – Supplemental, dated January 13, 2010
Blythe Solar Power Project, Docket No. 09-AFC-6

Dear Mr. Solomon:

Attached please find the Responses for the CEC Data Requests Set 1 – Supplemental dated January 13, 2010 for the Palo Verde I, LLC Blythe Solar Power Project.

Please feel free to call me directly at 510/524-4517 if you have any questions on this Supplemental submittal or any other aspects of our Data Responses.

Sincerely,

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STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION

In the Matter of: **APPLICATION FOR CERTIFICATION for the *BLYTHE SOLAR POWER PROJECT***	**Docket No. 09-AFC-6 PROOF OF SERVICE** *(Revised 12/28/2009)*

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DECLARATION OF SERVICE

I, Carl Lindner, declare that on, January 13, 2010, I served and filed copies of the attached **Blythe Solar Power Project: Responses to CEC Data Requests Set 1 - Supplemental,** dated January 13, 2010 (Consisting of Attachment DR-AIR-5: Revised Air Quality Impact Assessment for Blythe Solar Power Project; Revised Responses to CEC Data Requests – Visual Resources; and, DR-BIO-69 Conceptual Decommissioning Plan). The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[http://www.energy.ca.gov/sitingcases/palmdale/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, in the following manner:

(*Check all that Apply*)

For service to all other parties:

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

__X___ by personal delivery or by overnight delivery service or depositing in the United States mail at Camarillo, California with postage or fees thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

For filing with the Energy Commission:

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

OR

_____ depositing in the mail an original and 12 paper copies, along with 13 CDs, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 09-AFC-6
1516 Ninth Street, MS-4
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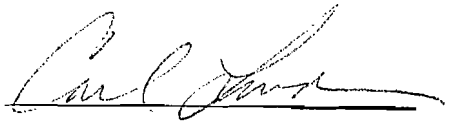
I declare under penalty of perjury that the foregoing is true and correct.



AECOM
Environment

Attachment DR-AIR-5

Revised Air Quality Impact Assessment for Blythe Solar Power Project

09-AFC-6

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1.0 Introduction

This document outlines the supplemental modeling performed in response to BLYTHE SOLAR POWER PLANT (09-AFC-6), DATA REQUESTS SET 1 (#1-260), issued by the California Energy Commission (CEC) on December 12, 2009. This attachment documents the air dispersion modeling performed in response to the following CEC Air Quality requests:

- DR-AIR-5: Please update the construction and operations particulate modeling analysis, as necessary, based on the revised fugitive dust emission calculations.
- DR-AIR-10: Please provide a defensible rationale as to why the locations for the area source emission inputs did not change from short-term to annual modeling, or please provide annual construction modeling that matches the extent of annual construction activities.
- DR-AIR-13: Please provide a revised construction emissions NO_2 modeling analysis that uses the NOx_OLM option with an OLM source group, and if necessary or desired, that uses actual hourly background NO_2 data.
- DR-AIR-27: Please provide a list from the MDAQMD of large stationary source projects with permitted emissions, for projects with greater than 5 tons of permitted emissions of any single criteria pollutant. Include projects located within six miles of the project site that have been recently permitted, but did not start operation prior to 2009 such as the Blythe Energy Project Phase II, or are in the process of being permitted.
- DR-AIR-28: Please provide a cumulative impacts modeling analysis in consultation with Energy Commission staff, if necessary, based on the project list provided by MDAQMD.

In response to the five requests listed above, the newest version of the AERMOD model (version 09292) was applied with a three-year sequential hourly meteorological data set, which is more than the one year of meteorological data required in Appendix B of the CEC's Guidelines (Rules of Practice and Procedure, Power Plant Site Certification, 2008) for both operations and the construction modeling. Configuration of the model sources, the meteorological data used, and the receptor grids used in the modeling remain the same as in the original application and are fully documented in Section 5.2 of the Application for Certification (AFC) and not repeated here unless they have been modified as noted in the sections below. The Air Dispersion Modeling Archive is included electronically on a CD in this attachment.

2.0 Summary of Modeling Revisions

2.1 Criteria Pollutant Emissions Changes

For both operations and construction, a number of changes were made to the BSPP emissions used in the modeling analysis. These changes include:

- Particulate matter less than 10 microns (PM10) and particulate matter less than 2.5 microns (PM2.5) emissions were updated to reflect the adjusted silt loading content for the particulate modeling.
- Emissions for all criteria pollutants during construction were revised based on updated construction-related vehicular traffic estimates.
- The emergency diesel generators, auxiliary boilers, and heat transfer fluid (HTF) heaters located at each power block have been resized since the original AFC submittal. As a result, their source parameter and criteria pollutant emissions have been updated for the operations modeling.

The revised detailed emission calculations for construction and operations are provided in spreadsheets with the filenames Blythe DR Construction Emissions.xlsx, and Blythe DR Operating Emissions.xlsx, respectively, on the CD-ROM in Attachment DR-AIR-2, Emission Calculations.

2.2 Modifications to the Annual Construction Sources

Per request DR-AIR-10, the annual construction modeling was modified by adjusting the area sources to cover construction across the entire Project site. As was discussed in the response to DR-AIR-10, keeping the construction emission sources in the worst-case location for the entire year for the annual period model runs is a very conservative (worst-case) approach compared to distributing the annual emissions over the entire site. To respond to the CEC request, the revised source locations and layout used in the revised modeling are given in Figure DR-AIR-5-1.

As described in the AFC, the solar field construction activities were divided into three phases: 1) surveying, brush removal and site preparation; 2) scraping and grading; and 3) solar panel installation. In addition to the three area sources representing those phases, two additional area sources were defined for modeling purposes, which included power block construction and a vehicle corridor from the laydown area to the construction zone.

In the prior modeling, each construction activity was allocated to an individual area source. In the revised annual modeling, the surveying, brush removal, site preparation, scraping and grading, and solar panel installation emission sources were combined into eight large solar array construction sources which covered all of the solar fields at the facility. Emissions from each construction activity were equally allocated to each of the eight new construction area sources. In addition, each of the four power block construction areas sources were represented by a rectangular area source 170 meters by 615 meters (104,550 square meters [m^2]). The total annual emissions for all power block construction were then distributed equally over the four power block area sources. The eight solar field construction sources had the following areas as shown in Table DR-AIR-5-1.

Table DR-AIR-5-1: Annual Solar Field Construction Area Sources

Source Location	Model Source Name	Source Area (m^2)
Solar Unit #1 West Array	SLNE1_EQ, SLNE1_FG	2,828,500
Solar Unit #1 East Array	SLNE2_EQ, SLNE2_FG	2,696,200
Solar Unit #2 West Array	SLNW1_EQ, SLNW1_FG	2,845,900
Solar Unit #2 East Array	SLNW2_EQ, SLNW2_FG	2,870,000
Solar Unit #3 West Array	SLSW1_EQ, SLSW1_FG	2,950,000
Solar Unit #3 East Array	SLSW2_EQ, SLSW2_FG	1,684,100
Solar Unit #4 West Array	SLSE1_EQ, SLSE1_FG	2,875,000
Solar Unit #4 East Array	SLSE2_FG, SLSE2_FG	1,594,400
Total Area (m^2):		**20,344,100**

Vehicular traffic to and from the laydown area was represented by a polygon area source with a total area of 1,292,200 m^2. This source represents emissions from haul trucks and construction equipment with vertical exhaust pipes travelling from the laydown/manufacturing area at the southern end of the Blythe property to the various power block and solar array construction areas. The base elevation chosen for this source was the elevation at the centroid of the source (161.5 meters).

For fugitive particulate emissions, all of the construction emission sources had a second overlaid area source representing paved and unpaved roadway travel and other construction activities that produce fugitive emissions (e.g. scraping, grading and vehicular traffic in unpaved areas).

2.3 Modifications to the Operational Modeling Sources.

As was mentioned in Section 2.1, the characteristics of the auxiliary boilers, emergency generators, and HTF heaters to be installed at the Blythe Solar Power Project (BSPP) have been updated since the AFC submittal based on additional information becoming available. The revised source characteristics for the auxiliary boilers and emergency generators are given in Table DR-AIR-5-2.

Table DR-AIR-5-2: Revised Ancillary Equipment Source Data

Parameter	Auxiliary Boiler	Emergency Generator	HTF Heater
Stack Height (feet)	50	23	80
Stack Diameter (feet)	3	0.75	3
Exit Temperature (°Fahrenheit)	300	770	300
Exit Velocity (feet/second)	23.6	464.9	23.6

2.4 Nitrogen Dioxide Modeling with the Ozone Limiting Method

Per request DR-AIR-13, the ozone limiting method (OLM) modeling for Nitrogen Dioxide (NO_2) impacts for both construction and operations was updated to include an OLMGROUP source group to which all modeled sources were added. For the BSPP Air Quality Impacts Analysis (AQIA), the OLM was applied as implemented in AERMOD with the use of hourly ozone concentrations from the most representative monitor. In using the OLM in AERMOD, conversion of nitrogen oxides emissions to NO_2 concentrations are limited based on the availability of ozone as determined by the ambient background levels. The updated NO_2 modeling for construction and operations for both the 1-hour and annual periods used this updated OLMGROUP configuration.

Monitoring data for ozone were available at the Blythe monitoring station; however, ozone monitoring at the Blythe station did not begin until May 2003. Therefore ozone monitoring data from Niland, California were used for all of 2002 and January through April of 2003, and Blythe monitoring data were used from May 2003 through 2004. All missing hourly ozone data were filled using the average hourly concentration over the three years of data.

3.0 Revised Air Quality Impact Assessment

3.1 Impacts from BSPP Construction

The results of the construction modeling are given in Table DR-AIR-5-3. Note that these results are based on modeling which uses the site-wide area sources for annual modeling as requested by the CEC. As shown in the table, all impacts, when added to the appropriate ambient backgrounds, are below their respective National Ambient Air Quality Standards (NAAQS)/California Ambient Air Quality Standards (CAAQS) with the exception of 24-hour PM10 and annual PM10. In both cases, Project impacts alone are below their respective CAAQS with maximum concentrations of 30.9 micrograms per cubic meter (µg/m^3) for 24-hour PM10 and 3.63 µg/m^3 for annual PM10.

Table DR-AIR-5-3: NAAQS/CAAQS Analysis for Project Construction

Pollutant	Averaging Period	Concentrations (µg/m^3)				
		AERMOD Result	Ambient Background[2]	Total [3,4,5]	CAAQS	NAAQS
NO_2[1]	1-hr	144.2	174.9	319	339	--
	Annual	0.41	22.6	23	57	100
CO	1-hr	231	2645	2,880	23,000	40,000
	8-hr	76.0	1,035	1,110	10,000	10,000
PM10	24-hr	30.9	162	193	50	150
	Annual	3.63	30.0	34	20	--
PM2.5	24-hr	7.82	27.0	35	--	35
	Annual	0.40	10.6	11	12	15
SO_2	1-hr	1.02	503.0	504	665	--
	3-hr	0.34	434.9	435	--	1,300
	24-hr	0.13	99.6	100	105	365
	Annual	0.001	5.2	5	--	80

1 Modeled NO_2 concentrations as determined with the OLM.

2 From Table 5.2-33 of the BSPP AFC. These values correspond to the highest monitored values from 2005 – 2007, except for PM2.5, which is the 98th percentile value over three years for the Indio, CA monitoring site.

3 Modeled concentration plus ambient background.

4 Result reflects 10-hour days from March through September and 8-hour days from October through February.

5 Totals are rounded to three or fewer significant figures.

In the case of PM10 impacts, the maximum modeled 24-hour average for PM10 exceeds the CAAQS when background concentrations are added because the PM10 air quality monitoring station data used for this BSPP analysis show that the PM10 CAAQS is already exceeded in the area where the data were collected, i.e., in Niland. Actual Project impacts from 24-hour PM10 represent 62 percent of the CAAQS and only 16 percent of the total impact when background is considered. The same is true for annual PM10, as the Project impacts represent only 18 percent of the CAAQS for annual PM10 and only 11 percent of the total impact to the annual PM10 concentrations when the worst-case background is considered. As was discussed in Section 5.2 of the AFC, identifying appropriate background data for use in this analysis was difficult for the following reasons:

- While the Project site is in a part of Riverside County-designated attainment for PM10, the monitors available are all located to the west in parts of Riverside County or other counties that are designated non-attainment for PM10.
- Additionally, the closest monitors are located in urban/industrial/agricultural areas which are likely to overestimate background pollutant concentrations in the Project area.

3.2 Impacts from BSPP Operations

The source configurations for the operations modeling remained the same as in the BSPP AFC modeling with the exception of the changes to the ancillary equipment noted in Section 2.3. The worst-case operations emissions of the Project ancillary sources were modeled along with vehicular emissions from the solar field maintenance vehicles.

The maximum modeled concentrations for all Project emissions are summed with ambient background concentrations for comparison to the NAAQS/CAAQS in Table DR-AIR-5-4. As shown in Table DR-AIR-5-4, the total concentrations comprised of maximum modeled concentration plus maximum ambient background are below the NAAQS/CAAQS for all pollutants with the exception of the 24-hour PM10 CAAQS and NAAQS, annual PM10 CAAQS, and 1-hour NO_2 CAAQS.

In the case of PM10, the ambient background utilized already exceeds the standards and BSPP contributions are relatively small (37 percent and 3 percent of the 24-hour and annual PM10 CAAQS, respectively).

In the case of 1-hour NO_2, only 2002 showed modeled impacts which, when added to the maximum ambient background, exceeded the 1-hour NO_2 CAAQS of 339 $\mu g/m^3$. The modeled exceedances occur generally at night under limited dispersion conditions and are principally due to emissions from the emergency generators, combined with the maximum observed background concentration. However, the emergency generators are unlikely to be tested at night so the modeling analysis is overly conservative. To refine the modeling analysis, AERMOD was rerun using the “Maxifile” option to determine how many hours produced impacts of at least 164 $\mu g/m^3$, which, when added to the maximum ambient background concentration of 175 $\mu g/m^3$, would exceed the CAAQS. The results showed that only three hours out of the three years modeled (i.e., an average of only one hour per year) had the potential to exceed the 1-hour NO_2 CAAQS.

Table DR-AIR-5-4: NAAQS/CAAQS Operations Impacts with Ambient Background for BSPP Sources

Pollutant	Averaging Period	Concentrations ($\mu g/m^3$)			
		AERMOD Result	Ambient Background [2]	Total [3,4]	NAAQS / CAAQS [5]
NO_2 [1]	1-hr	183	175	358	339
	Annual	0.047	22.6	22.6	57
CO	1-hr	189	2,645	2,830	23,000
	8-hr	64.81	1,035	1,100	10,000
PM10	24-hr	18.56	162.0	181	50
	Annual	1.59	30.0	31.6	20
PM2.5	24-hr	1.64	27.0	28.6	35
	Annual	0.166	10.6	10.8	12
SO_2	1-hr	0.377	503.0	503	655
	3-hr	0.298	434.9	435	1,300
	24-hr	0.006	99.6	99.6	105
	Annual	0.0005	5.2	5.2	80

1 Modeled NO_2 concentrations as determined with the OLM.
2 Highest value from Table 5.2-33 of BSPP AFC.
3 Modeled concentration plus ambient background.
4 Totals are rounded to three or fewer significant figures.
5 Most restrictive standard is listed

As a further refinement, hourly NO_2 background data for the Palm Springs, California monitoring site were acquired from the U.S. Environmental Protection Agency AIRS database data repository (http://www.epa.gov/ttn/airs/airsaqs/detaildata/downloadaqsdata.htm). The actual ambient background NO_2 concentration for each hour was then added to the modeled concentration and compared to the CAAQS. The results are shown in Table DR-AIR-5-5. As seen in the table, when added to the time matched ambient background NO_2 concentration, all three hours with the potential to exceed the CAAQS fall well below the standard of 339 $\mu g/m^3$. As discussed above, the peak 1-hour NO_2 impacts for the BSPP during operations are modeled to occur at night and are caused almost entirely by emissions from the emergency diesel generators. Testing of emergency engines is unlikely to occur during nighttime hours, as simulated in the model for the three potential problem hours. The modeling results presented in Table DR-AIR-5-4 are therefore conservative and demonstrate that the NO_2 CAAQS is unlikely to be exceeded during operations at the BSPP.

Table DR-AIR-5-5: Time matched NO_2 impacts for Hours with Potential CAAQS Exceedance

Hour	Modeled Impact ($\mu g/m^3$)	Ambient Background (ppm)	Ambient Background ($\mu g/m^3$)	Total Concentration[1] ($\mu g/m^3$)	Fraction of CAAQS (%)
5/23/02 Hour 19	182.70	0.019	35.74	218	64%
5/23/02 Hour 20	167.05	0.017	31.98	199	59%
6/14/02 Hour 22	168.19	0.015	28.22	196	58%

[1] Totals are rounded to three significant figures.
ppm = parts per million $\mu g/m^3$ = micrograms per cubic meter

3.3 Cumulative Impacts During BSPP Operations

The CEC requires cumulative modeling for all criteria pollutants against their respective CAAQS/NAAQS. Therefore, cumulative modeling of operational emissions was performed for all criteria pollutants.

Normally, the emissions from existing sources are considered to be reflected in the background concentration that is added to the maximum project contribution. This is already a very conservative approach, since it assumes that the maximum background value could occur at the same time and place as the maximum modeled impact, even though each would likely be produced under different meteorological conditions. Further, the background monitoring stations are generally located within an urban area which would normally reflect higher concentrations than remote locations.

In order to respond to the DR-AIR-27, MDAQMD was asked by PVS1 to provide a list of all existing sources with greater than 5 tons of permitted emissions of any criteria air pollutant and within 6 miles of BSPP. This inventory was not received as of 1/13/10. Therefore, aerial maps were scanned to identify potential cumulative sources. The only existing sources identified within the Project area that could produce an emission impact gradient sufficient to result in a cumulative impact were the Blythe Energy Project (BEP) and the Southern California Gas (SoCalGas) compressor station.

The BEP is a 520 MW combined-cycle natural gas-fired electric generating facility, approved by the CEC under docket 99-AFC-8 in 2001. The BEP is located in the City of Blythe, California, just north of Interstate 10 (I-10), about seven miles west of the California-Arizona border. The BEP is located about three miles from the closest boundary of BSPP and about four miles from the closest BSPP power block.

The SoCalGas compressor station is located near the intersection of S. Arrowhead Blvd. and 14th Ave. in Blythe, CA, which is about 5.7 miles from the closest BSPP boundary. This station was built in 1949 and is in the process of being modernized.

Information for modeling the BEP sources was obtained from the CEC website and verified with the current facility permit. Source data for the SoCalGas compressor station came from the BEP II Amendment described below. The only emissions data available for the compressor station in the BEP II Amendment were for PM2.5. In order to develop emissions for the other pollutants, the PM2.5 emissions were compared to the emissions of another compressor station project for which data were available, the Steele City, NE compressor station. Since the PM2.5 emissions at Steele City were greater than those of the Blythe station, and because at nearly 6 miles from the farthest extent of the BSPP the impacts from the compressor station were very unlikely to overlap with those of the BSPP, the emissions from Steele City

were matched with the SoCalGas compressor station source data from the BEP II Amendment to simulate potential worst-case emissions from the SoCalGas facility.

In addition to existing sources, DR-AIR-27 indicated that projects that had been permitted but had not yet started operation prior to 2009 or were in the process of being permitted should also be included in the cumulative analysis. Although not confirmed by the MDAQMD, the Blythe Energy Project Phase II (BEP II) appears to be the only project in this category.

The BEP II is a 538 MW combined-cycle natural gas-fired electric generating facility that is proposed to be built adjacent to the BEP. The BEP II was licensed by the CEC in 2005 (02-AFC-1). In October 2009, an Amendment Petition was filed to revise some aspects of the proposed facility. The BEP II Amendment includes a cumulative PM2.5 analysis, which includes the BEP, BEP II, and the SoCalGas compressor station. Information from that cumulative analysis was used for this response to DR-AIR-27.

Source information for BEP, BEP II, and the SoCalGas compressor station are given in Table DR-AIR 5-6. The annual and short term emissions modeled for each source are given in Tables DR-AIR 5-7, and DR-AIR 5-8, respectively. The relative locations of BSPP, BEP, BEP II, and the SoCal Gas compressor station are shown in Figure DR-AIR-5-2.

The results of the cumulative modeling are shown in Table DR-AIR-5-9. As shown in the table, the cumulative impacts of all sources included in the modeling, when combined with the ambient background concentrations, do not change significantly from the Project impacts described in Tables DR-AIR-5-3 and DR-AIR-5-4. Therefore, compliance with all applicable NAAQS/CAAQS is demonstrated and no additional analysis is required.

Table DR-AIR-5-6: Non-BSPP Sources Included in Cumulative Modeling Analysis

Source ID	Model Source	UTM X (m)	UTM Y (m)	Base Elev. (m)	Stack Height (m)	Stack Temp. (ºK)	Exit Velocity (m/s)	Stack Diam. (m)
Blythe Energy Project								
Turbine 1	B1_CT1	714578.6	3721958.2	101.5	39.624	372.00	10.74	5.029
Turbine 2	B1_CT2	714578.6	3721928.2	101.5	39.624	372.00	10.74	5.029
CT Cell 1	B1_COL1	714512.6	3722044.2	101.5	15.24	287.13	9.56	9.144
CT Cell 2	B1_COL2	714525.6	3722044.2	101.5	15.24	287.13	9.56	9.144
CT Cell 3	B1_COL3	714538.6	3722044.2	101.5	15.24	287.13	9.56	9.144
CT Cell 4	B1_COL4	714550.6	3722044.2	101.5	15.24	287.13	9.56	9.144
CT Cell 5	B1_COL5	714563.6	3722044.2	101.5	15.24	287.13	9.56	9.144
CT Cell 6	B1_COL6	714576.6	3722044.2	101.5	15.24	287.13	9.56	9.144
CT Cell 7	B1_COL7	714589.6	3722044.2	101.5	15.24	287.13	9.56	9.144
CT Cell 8	B1_COL8	714602.6	3722044.2	101.5	15.24	287.13	9.56	9.144
Southern California Gas Blythe Compressor Station								
Compressor	SC_CMPRS	718621.6	3720894.2	79.0	7.32	708.20	41.38	0.457

Table DR-AIR-5-6: Non-BSPP Sources Included in Cumulative Modeling Analysis

Source ID	Model Source	UTM X (m)	UTM Y (m)	Base Elev. (m)	Stack Height (m)	Stack Temp. (ºK)	Exit Velocity (m/s)	Stack Diam. (m)
Generators	SC_EMGEN	718621.6	3720894.2	79.0	6.71	738.70	5.44	0.396
Proposed Blythe Energy Project Phase II								
Turbine 1	B2_CT1	714371.6	3721555.6	101.5	39.62	378.70	10.74	6.553
Turbine 2	B2_CT2	714328.1	3721555.6	101.5	39.62	378.70	10.74	6.553
Auxiliary Boiler	B2_AUXBL	714386.6	3721590.6	101.5	18.29	500.35	12.64	1.067
Emer. Fire Pump	B2_FWPMP	714353.5	3721499.8	101.5	6.10	796.00	59.55	0.13
CT Cell 1	B2_COL1	714217.8	3721621.9	101.5	15.24	287.13	9.56	9.144
CT Cell 2	B2_COL2	714217.8	3721607.8	101.5	15.24	287.13	9.56	9.144
CT Cell 3	B2_COL3	714218.7	3721593.3	101.5	15.24	287.13	9.56	9.144
CT Cell 4	B2_COL4	714218.3	3721578.8	101.5	15.24	287.13	9.56	9.144
CT Cell 5	B2_COL5	714218.3	3721563.8	101.5	15.24	287.13	9.56	9.144
CT Cell 6	B2_COL6	714217.8	3721549.7	101.5	15.24	287.13	9.56	9.144
CT Cell 7	B2_COL7	714218.3	3721535.2	101.5	15.24	287.13	9.56	9.144
CT Cell 8	B2_COL8	714218.3	3721520.2	101.5	15.24	287.13	9.56	9.144
CT Cell 9	B2_COL9	714218.3	3721506.2	101.5	15.24	287.13	9.56	9.144
CT Cell 10	B2_COL10	714218.3	3721491.6	101.5	15.24	287.13	9.56	9.144
CT Cell 11	B2_COL11	714218.3	3721477.1	101.5	15.24	287.13	9.56	9.144

1. Source data from *BLYTHE ENERGY PROJECT PHASE II AMENDMENT (02-AFC-1C)*, Table 5.2-25 (http://www.energy.ca.gov/sitingcases/blythe2/compliance/2009-10-26_Amendment.pdf)
2. Source data from *BLYTHE ENERGY PROJECT PHASE II AMENDMENT (02-AFC-1C)*, Table 5.2-25 (http://www.energy.ca.gov/sitingcases/blythe2/compliance/2009-10-26_Amendment.pdf), except combustion turbines from Table 5.2-17.
3. BEP II Turbine parameters assume duct burners on w/95 degree F ambient temp.

m = meters m/s = meters per second ºK = degrees Kelvin

Table DR-AIR-5-7: Non-BSPP Sources Annual Emissions

Source ID	Model Source	SO_2 (lb/hr)	SO_2 (g/s)	NO_X (lb/hr)	NO_X (g/s)	CO (lb/hr)	CO (g/s)	PM10 (lb/hr)	PM10 (g/s)	PM2.5 (lb/hr)	PM2.5 (g/s)
Blythe Energy Project											
Turbine 1	B1_CT1	2.7	0.340	19.8	2.495	17.5	2.205	11.5	1.449	11.5	1.449
Turbine 2	B1_CT2	2.7	0.340	19.8	2.495	17.5	2.205	11.5	1.449	11.5	1.449
CT Cell 1	B1_COL1	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 2	B1_COL2	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 3	B1_COL3	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 4	B1_COL4	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 5	B1_COL5	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 6	B1_COL6	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 7	B1_COL7	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 8	B1_COL8	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
Southern California Gas Blythe Compressor Station											
Compressor	SC_CMPRS	3.6	0.451	14.0	1.759	14.2	1.784	1.6	0.199	1.6	0.199
Generators	SC_EMGEN	0.0	0.000	0.1	0.016	2.1	0.266	0.0	2.9E-04	0.0	2.9E-04
Proposed Blythe Energy Project Phase II											
Turbine 1	B2_CT1	1.4	0.173	19.6	2.471	16.0	2.016	6.4	0.811	6.4	0.811
Turbine 2	B2_CT2	1.4	0.173	19.6	2.471	16.0	2.016	6.4	0.811	6.4	0.811
Auxiliary Boiler	B2_AUXBL	0.1	0.012	0.4	0.047	1.8	0.223	0.3	0.036	0.3	0.036
Emer. Fire Pump	B2_FWPMP	2.4E-05	3.0E-06	1.0E-02	1.3E-03	5.6E-01	0.071	4.1E-04	5.2E-05	4.1E-04	5.2E-05
CT Cell 1	B2_COL1	N/A	N/A	N/A	N/A	N/A	N/A	0.124	0.016	0.124	0.016
CT Cell 2	B2_COL2	N/A	N/A	N/A	N/A	N/A	N/A	0.124	0.016	0.124	0.016
CT Cell 3	B2_COL3	N/A	N/A	N/A	N/A	N/A	N/A	0.124	0.016	0.124	0.016
CT Cell 4	B2_COL4	N/A	N/A	N/A	N/A	N/A	N/A	0.124	0.016	0.124	0.016
CT Cell 5	B2_COL5	N/A	N/A	N/A	N/A	N/A	N/A	0.124	0.016	0.124	0.016
CT Cell 6	B2_COL6	N/A	N/A	N/A	N/A	N/A	N/A	0.124	0.016	0.124	0.016
CT Cell 7	B2_COL7	N/A	N/A	N/A	N/A	N/A	N/A	0.124	0.016	0.124	0.016
CT Cell 8	B2_COL8	N/A	N/A	N/A	N/A	N/A	N/A	0.124	0.016	0.124	0.016
CT Cell 9	B2_COL9	N/A	N/A	N/A	N/A	N/A	N/A	0.124	0.016	0.124	0.016
CT Cell 10	B2_COL10	N/A	N/A	N/A	N/A	N/A	N/A	0.124	0.016	0.124	0.016

Table DR-AIR-5-7: Non-BSPP Sources Annual Emissions

Source ID	Model Source	SO_2 (lb/hr)	SO_2 (g/s)	NO_X (lb/hr)	NO_X (g/s)	CO (lb/hr)	CO (g/s)	PM10 (lb/hr)	PM10 (g/s)	PM2.5 (lb/hr)	PM2.5 (g/s)
CT Cell 11	B2_COL11	N/A	N/A	N/A	N/A	N/A	N/A	0.124	0.016	0.124	0.016

1. Blythe I cooling tower emissions and SoCalGas compressor station emissions from BLYTHE ENERGY PROJECT PHASE II AMENDMENT (02-AFC-1C), Table 5.2-25 (http://www.energy.ca.gov/sitingcases/blythe2/compliance/2009-10-26_Amendment.pdf).
2. Blythe I combustion turbine emissions from Blythe Energy LLC, Federal Operating Permit Number: 130202262
3. Emissions data from BLYTHE ENERGY PROJECT PHASE II AMENDMENT (02-AFC-1C), Table 5.2B-1 page 2. (http://www.energy.ca.gov/sitingcases/blythe2/compliance/2009-10-26_Amendment.pdf)
4. lb/hr = pounds per hour
   g/s = grams per second

Table DR-AIR-5-8: Non-BSPP Sources Short-Term Emissions

Source ID	Model Source	SO_2 (lb/hr)	SO_2 (g/s)	NO_X (lb/hr)	NO_X (g/s)	CO (lb/hr)	CO (g/s)	PM10 (lb/hr)	PM10 (g/s)	PM2.5 (lb/hr)	PM2.5 (g/s)
Blythe Energy Project Phase I											
Turbine 1	B1_CT1	2.7	0.340	19.8	2.495	17.5	2.205	11.5	1.449	11.5	1.449
Turbine 2	B1_CT2	2.7	0.340	19.8	2.495	17.5	2.205	11.5	1.449	11.5	1.449
CT Cell 1	B1_COL1	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 2	B1_COL2	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 3	B1_COL3	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 4	B1_COL4	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 5	B1_COL5	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 6	B1_COL6	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 7	B1_COL7	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
CT Cell 8	B1_COL8	N/A	N/A	N/A	N/A	N/A	N/A	0.050	0.0063	0.050	0.0063
Southern California Gas Blythe Compressor Station											
Compressor	SC_CMPRS	3.6	0.451	14.0	1.759	14.2	1.784	1.6	0.199	1.6	0.199
Generators	SC_EMGEN	1.6E-04	3.6E-04	0.1	0.280	2.1	0.266	2.3E-03	6.3E-03	2.3E-03	6.3E-03
Proposed Blythe Energy Project Phase II											
Turbine 1	B2_CT1	3.6	0.454	19.6	2.471	16.0	2.016	7.5	0.945	7.5	0.945
Turbine 2	B2_CT2	3.6	0.454	19.6	2.471	16.0	2.016	7.5	0.945	7.5	0.945
Auxiliary Boiler	B2_AUXBL	0.140	0.018	0.6	0.069	1.8	0.223	0.4	0.053	0.4	0.053
Emer. Fire Pump	B2_FWPMP	0.004	5.0E-04	1.7	0.220	0.6	0.071	0.003	3.6E-04	0.003	3.6E-04
CT Cell 1	B2_COL1	N/A	N/A	N/A	N/A	N/A	N/A	0.124	1.6E-02	0.124	1.6E-02

Table DR-AIR-5-8: Non-BSPP Sources Short-Term Emissions

Source ID	Model Source	SO_2 (lb/hr)	SO_2 (g/s)	NO_X (lb/hr)	NO_X (g/s)	CO (lb/hr)	CO (g/s)	PM10 (lb/hr)	PM10 (g/s)	PM2.5 (lb/hr)	PM2.5 (g/s)
CT Cell 2	B2_COL2	N/A	N/A	N/A	N/A	N/A	N/A	0.124	1.6E-02	0.124	1.6E-02
CT Cell 3	B2_COL3	N/A	N/A	N/A	N/A	N/A	N/A	0.124	1.6E-02	0.124	1.6E-02
CT Cell 4	B2_COL4	N/A	N/A	N/A	N/A	N/A	N/A	0.124	1.6E-02	0.124	1.6E-02
CT Cell 5	B2_COL5	N/A	N/A	N/A	N/A	N/A	N/A	0.124	1.6E-02	0.124	1.6E-02
CT Cell 6	B2_COL6	N/A	N/A	N/A	N/A	N/A	N/A	0.124	1.6E-02	0.124	1.6E-02
CT Cell 7	B2_COL7	N/A	N/A	N/A	N/A	N/A	N/A	0.124	1.6E-02	0.124	1.6E-02
CT Cell 8	B2_COL8	N/A	N/A	N/A	N/A	N/A	N/A	0.124	1.6E-02	0.124	1.6E-02
CT Cell 9	B2_COL9	N/A	N/A	N/A	N/A	N/A	N/A	0.124	1.6E-02	0.124	1.6E-02
CT Cell 10	B2_COL10	N/A	N/A	N/A	N/A	N/A	N/A	0.124	1.6E-02	0.124	1.6E-02
CT Cell 11	B2_COL11	N/A	N/A	N/A	N/A	N/A	N/A	0.124	1.6E-02	0.124	1.6E-02

1. Blythe I cooling tower emissions and SoCalGas compressor station emissions from BLYTHE ENERGY PROJECT PHASE II AMENDMENT (02-AFC-1C), Table 5.2-25

   (http://www.energy.ca.gov/sitingcases/blythe2/compliance/2009-10-26_Amendment.pdf).

   Blythe I combustion turbine emissions from Blythe Energy LLC, Federal Operating Permit Number: 130202262
2. Emissions data from BLYTHE ENERGY PROJECT PHASE II AMENDMENT (02-AFC-1C), Table 5.2B-1 page 2. (http://www.energy.ca.gov/sitingcases/blythe2/compliance/2009-10-26_Amendment.pdf)

Table DR-AIR-5-9: Cumulative Modeling Impacts for BSPP Operations

Pollutant	Averaging Period	Concentrations ($\mu g/m^3$)			
		AERMOD Result	Ambient Background [2]	Total [3,4]	NAAQS / CAAQS [5]
NO_2 [1]	1-hr	183	175	358	339
	Annual	0.9	22.6	23.5	57
CO	1-hr	189	2,645	2,834	23,000
	8-hr	68	1,035	1,103	10,000
PM10	24-hr	18.6	162.0	180.6	50
	Annual	1.6	30.0	31.6	20
PM2.5	24-hr	2.9	27.0	29.9	35
	Annual	0.8	10.6	11.4	12
SO_2	1-hr	7.4	503.0	510.4	655
	3-hr	3.1	434.9	438	1,300
	24-hr	0.8	99.6	100.4	105
	Annual	0.1	5.2	5.3	80

1 Modeled NO_2 concentrations as determined with the OLM.
2 Highest value from Table 5.2-33 of BSPP AFC.
3 Modeled concentration plus ambient background.
4 Totals are rounded to three or fewer significant figures.
5 Most restrictive standard is listed

Figure DR-AIR-5- 1: Revised Area Sources Used in Annual Construction Modeling Analysis

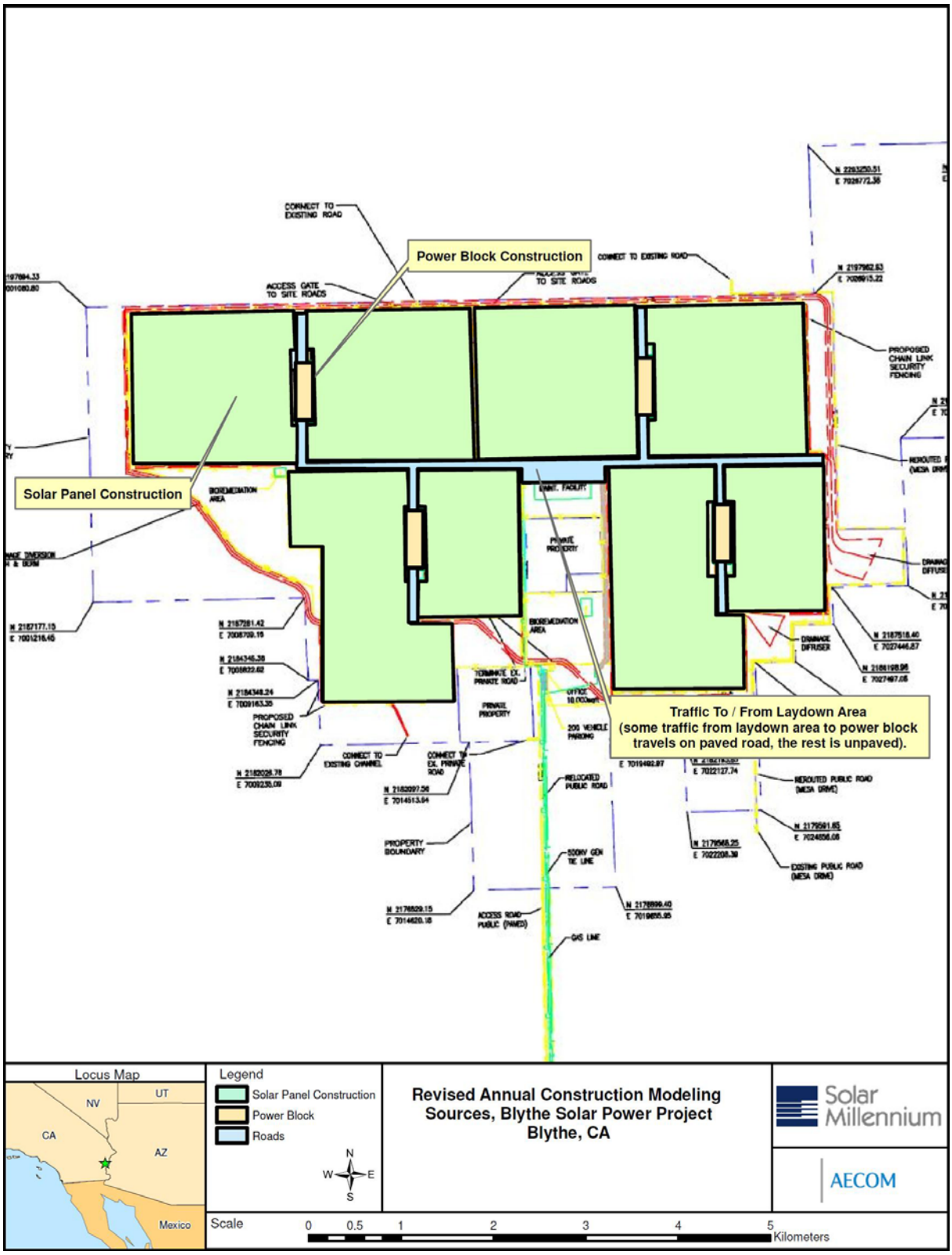
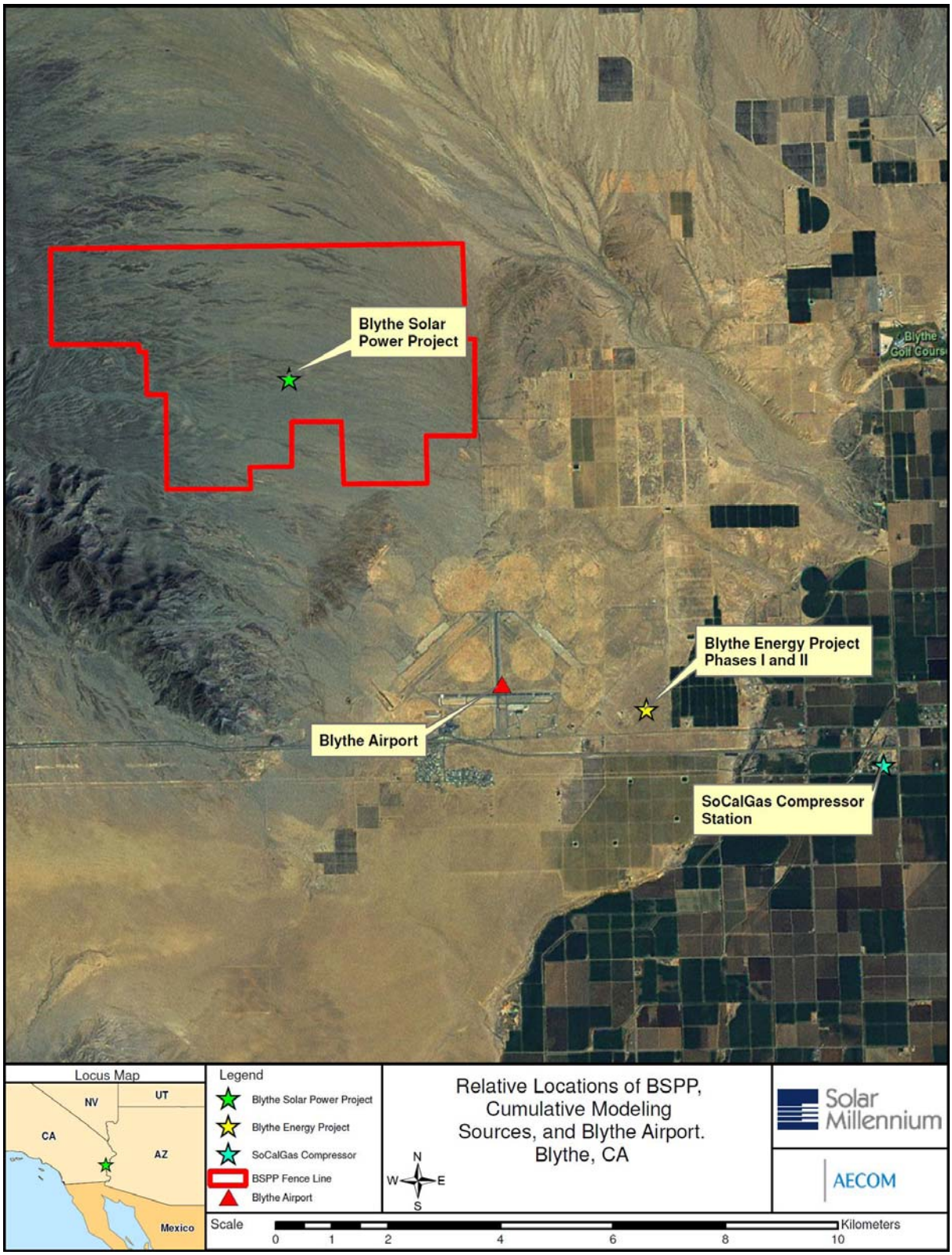


Figure DR-AIR-5- 2: Relative Location of BSPP and Facilities Included in Cumulative Analysis



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CONCEPTUAL DECOMMISSIONING PLAN
BLYTHE SOLAR POWER PLANT

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ATTACHMENT DR-BIO-69-A – FIGURES

Figure DR-Bio-69-1 Project Vicinity Map
Figure DR-Bio-69-2 Project Location Map

LIST OF ACRONYMS

Applicant	Palo Verde Solar Power I, LLC
AFC	Application for Certification
BLM	Bureau of Land Management
BSPP	Blythe Solar Power Project
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CEC	California Energy Commission
CFR	Code of Federal Regulations
HTF	Heat transfer fluid
Plan	Conceptual Decommissioning Plan
I-10	Interstate 10
LTUs	Land treatment units
MW	Megawatt
NEPA	National Environmental Policy Act
Project	Blythe Solar Power Project
ROW	Right of way
USFWS	U.S. Fish and Wildlife Service

I. INTRODUCTION

Palo Verde Solar Power I, LLC (the Applicant) proposes to construct four 250-Megawatt (MW) commercial solar thermal electric power-generating stations, collectively referred to as the Blythe Solar Power Project (BSPP or Project) in Riverside County, California. The Project would be located within a 9,405-acre right-of-way (ROW) owned by the Federal government and administered by the Bureau of Land Management (BLM), with the exception of a 160-acre private parcel.. Use of the Federal land would involve issuance of a ROW grant to the Applicant by BLM.

The proposed Blythe Solar Power Project (BSPP) is located approximately 8 miles west of the town of Blythe and to the north of the Interstate 10 (I-10) corridor in Riverside County, California (Figure DR-BIO-69-1 and DR-BIO-69-2). The disturbance area (area inside and outside the fence line that will be disturbed by the Project) consists of approximately 7,077 acres of undeveloped land administered by BLM, with the exception of one 160-acre private parcel. The Project site is currently undeveloped and vacant.

A. Purpose

This Draft Conceptual Decommissioning Plan (Plan) describes how the Project and its component structures will be properly removed, if necessary, at the end of the Project's useful lifespan, and the Project site reclaimed in accordance with the requirements of the Bureau of Land Management (BLM), the land owner. BLM currently is developing reclamation requirements for utility-scale solar projects; this Plan provides an initial approach to reclamation that will be modified to ensure compliance with those reclamation requirements once BLM adopts them. In addition, this Plan describes how financial resources will be available to undertake proper decommissioning of the Project. This Plan is submitted in support of an Application for Certification (AFC) submitted to the California Energy Commission (CEC), which must license all thermal power plants more than 50 Megawatt (MW) in California.

B. Project Description

The Applicant is proposing to construct the BSPP, a nominal 1,000-megawatt (MW) commercial solar thermal electric power-generating system. The Project is proposed on public lands managed by BLM; the Applicants have submitted an application to BLM for an ROW grant. The Project would have a nominal output of 1,000 MW, produced by four adjacent, identical, and independent 250-MW commercial solar thermal electric power units, each comprising a main

solar field and a main power-generating facility (power block), and shared support facilities (Figure DR-BIO-69-2). Shared support facilities would include associated office and maintenance buildings, a parking lot, a laydown area, drainage channels, a bioremediation area, water treatment and storage facilities, leach fields, a transmission line, substation, and onsite access roads (Figure DR-BIO-69-2).

The Project would utilize solar parabolic trough technology to generate electricity. With this technology, arrays of parabolic mirrors collect heat energy from the sun and refocus the radiation on a receiver tube located at the focal point of the parabola. A heat transfer fluid (HTF) is heated to high temperature (approximately 750 degrees Fahrenheit [˚F]) as it circulates through the receiver tubes. The heated HTF is then piped through a series of heat exchangers where it releases its stored heat to generate high-pressure steam. The steam is then fed to a traditional steam turbine generator where electricity is produced.

All four power units would share a main office building, a main maintenance facility and laydown area, a 200-vehicle parking lot, onsite access roads, and two land treatment units for bioremediation or land farming HTF-contaminated soil. Unit 1 and Unit 2 would share water treatment systems and water storage tanks for dust control, and Unit 3 and Unit 4 would share an identical set of water treatment and storage facilities. A central internal switchyard to serve all four power units would be located just outside the southwest boundary of the solar field of Unit 4. Each power block would have its own HTF pumping and freeze protection system, solar steam generator, steam turbine generator, an air-cooled condenser (ACC) for cooling, transmission lines and related electrical system, and auxiliary equipment (e.g., water treatment system, emergency generators).

Each power unit would have its own solar field, composed of piping loops arranged in parallel groups, and its own power block, centrally located within the solar field. Each power block would have its own HTF pumping and freeze protection system; solar steam generator; steam turbine generator; an ACC for cooling; transmission lines and related electrical system; and auxiliary equipment (e.g., water treatment system, emergency generators). The Project would require a new transmission line (see below for a description of the proposed transmission line).

Access to the BSPP site would be on a new road heading north from the frontage road along I-10. Only a small portion of the overall Project disturbance area (i.e., areas of anticipated ground disturbance associated with the Project) would be paved, primarily the onsite access road, the service roads to the power blocks, and 6 acres of each of the 18-acre power blocks. The solar fields would remain unpaved and without a gravel surface to prevent mirror damage. The Project

solar fields and support facilities perimeter would be secured with chain-link metal-fabric security fencing and controlled access gates.

The existing topographic conditions of the proposed BSPP facility show an average slope of approximately 1.25 percent toward the east on the west side of the facility and approximately 0.50 percent toward the southeast on the east side of the Project area (defined under “Project Area” below). The general stormwater flow pattern is from the higher elevations in the McCoy Mountains, located approximately 3 miles west of the Project area, to the lower elevations in McCoy Wash, located east of the Project area. Runoff from the mountains discharges into shallow moderately defined channels at the base of the mountains and passes through the Project area in a southeasterly direction and is intercepted off site by irrigation canals before reaching McCoy Wash. The development of the site would include intercepting the storm flows at the BSPP boundaries, channelizing and rerouting the flows into five channels along the north, southeast, south, west, and through the central portion of the site and then returning the flows to their sheet flow regime in the east and southeast portions of the Project area (Figure DR-BIO-69-2). These channels would intercept flows prior to their entry to the site and convey them in realigned channels to approximately the same locations where they exit the site under existing conditions. Outlets for each channel would end in diffusers. The following portions of the drainage channels would be located outside of the facility's security fence: the entire north channel including the end diffuser; the entire south channel; and the portions of the west channel located west of the northwest power unit (Unit 2) and southwest power unit (Unit 3). The portions of the drainage channels that would be located inside of the security fence include the entire central channel, except for a small portion immediately before the junction with the north channel; the entire southeast channel; and portions of the west channel traversing Unit 3, south of the southeast power unit (Unit 4), and the area between Unit 3 and Unit 4. The channels would be constructed with native material, and scour protection (i.e., riprap) would be added to the channel sides and bottoms in stress areas such as curves and slope transitions. No scour protection is proposed for the channel bottom in the straight sections of the channels. This is to allow the low flows to meander across the bottom, replicating as nearly as possible the flow regimes under current conditions. Channels would also collect onsite stormwater flows and direct them off site to the east and southeast. Channels would be designed to meet Riverside County requirements.

The Project also includes an electrical transmission system. The Project’s gen-tie transmission line route (which terminates at the substation site), is approximately 7 miles long and extends south from the Project disturbance area identified in the Project’s Application for Certification (AFC) document (AECOM 2009) to a point south of I-10, and then turns west to the substation

site (Figure DR-BIO-69-2). The substation would be constructed immediately west of the southern end of the transmission line (Figure DR-BIO-69-2). Features associated with the 7-mile transmission line and a substation that would be impacted by construction activities include crossing structures, pole pads, crane pads, pull sites splice sites, spur roads, and an access road.

Thermal power plants require cooling, which historically has involved large quantities of cooling water. The BSPP would use ACCs in a process commonly referred to as "dry cooling," which would dramatically reduce the amount of water needed by the facility. Water would be used for solar mirror washing, feedwater makeup, ancillary equipment heat rejection, dust suppression, firewater supply, and onsite domestic use. Total consumption for the facility is estimated at approximately 600 acre-feet per year (AFY) supplied by onsite groundwater wells. Sanitary wastewater would be collected for treatment in septic tanks and disposed of via leach fields.

To facilitate dust and contaminant removal, treated water would be used to spray clean the solar mirrors on a periodic basis, determined by a reflectivity monitoring program. This operation would generally be done at night and would involve a water truck spraying treated water on the mirrors in a drive-by fashion. Solar mirror washing would use approximately 260 AFY. Rinsate from the washing operation would be expected to evaporate on the mirror surface with no appreciable runoff.

C. Project Schedule

Pending receipt of necessary permits and approvals, construction is scheduled to begin in late 2010 and to the middle of 2016. The units will be developed in phases. Commercial operation of the first completed unit is expected to begin in mid 2013, with subsequent units coming online in 6 to 12 month intervals. The projected operating lifespan of the Project is 30 years, with potential to extend operating lifespan up to 50 years.

D. Responsible Parties

The Applicant is responsible for implementing all aspects of decommissioning in accordance with all applicable federal, state, and local permits. The CEC must license all thermal power plants more than 50 MW in California. Because the Project is proposed on Federal land, compliance with the National Environmental Policy Act (NEPA) is required. The CEC and the BLM are conducting a joint review through a combined California Environmental Quality Act (CEQA)-equivalent/NEPA document. State and Federal biological resources agencies (e.g., U.S. Fish and Wildlife Service [USFWS] and the California Department of Fish and Game [CDFG])

will review the Project and negotiate conditions related to sensitive species and drainages during construction, operations, and decommissioning.

II. DECOMMISSIONING PROCESS

The BSPP's projected lifespan is expected to span at least 30 years. At the end of the BSPP's useful lifespan, the Project will either be repowered or decommissioned. Repowering may involve replacing the existing parabolic troughs with components that are more efficient, thereby extending the useful lifespan of the Project. Some of the steps involved in decommissioning may also be part of repowering to the extent that the existing structures and foundations are not sufficiently engineered to accommodate the replacement of the solar fields.

Decommissioning will adhere to the requirements of appropriate governing authorities and will be in accordance with all applicable federal, state, and local permits, including any reclamation requirements BLM specifically adopts for utility-scale solar projects. The decommissioning steps described herein are also intended to comply with the reclamation standards set forth in CFR Title 43 Subpart 3809.

For this particular site, the decommissioning process will involve steps to dismantle and remove equipment, stabilize soil and drainages, and regrade and reshape features as necessary. These steps are described generally below; a more detailed Decommissioning Plan will be prepared once the disposition of the Project and subsequent use, if any, of the site is known.

1. The Applicant will hire an approved environmental monitor to oversee decommissioning activities and verify that no additional impacts to sensitive biological/cultural resources ensue.
2. Temporary roads and necessary improvement will be made, if necessary, to mobilize equipment for removing all surface improvements associated with the BSPP, including solar power units, transmission line towers, and operation facilities.
3. All components of the solar units, transmission line towers, and operation facilities will be dismantled and removed and all material would be transported off site. The removed materials will be resold, recycled or disposed of at a pre-approved landfill site.
4. Below-ground structures, such as foundations for the parabolic troughs and transmission line towers, will be excavated to a depth that is pre-approved with the appropriate regulatory agencies. This may include removing structures so that nothing is left in the ground above about 3 feet below grade level.

5. Any excavations will be backfilled with clean sub-grade soil material in a manner that precludes hazards and facilitates subsequent use of the site.

6. If appropriate in light of the BLM's reclamation requirements for utility-scale solar projects, and in light of the future use, if any, of the Project site, the engineered channels will remain in place. If the site is devoted to a subsequent use, ongoing maintenance of these channels will become the responsibility of the new lessee or right-of-way (ROW) holder. Should there be a time lapse between when the new lessee or ROW holder takes over responsibility for the site and when the BSPP is decommissioned, the Applicant will be responsible for maintenance of these engineered channels during this time period.

7. If removal of the engineered channels will be required in the future, a more detailed decommissioning plan will contain detailed steps and standards for accomplishing that removal.

8. Pursuant to CFR Title 43 Subpart 3809, all areas within the facility footprint, except the engineered channels, will be regraded and reshaped to conform with adjacent landforms in a manner that controls drainage, minimizes erosion, and stabilizes the soil.

III. FUNDING

Funding for decommissioning, whether it is needed at the anticipated facility closure date or it is needed earlier due to untimely closure (i.e., bankruptcy) shall be pursued once a comprehensive Plan is established. This funding will be established as part of the ROW lease with BLM, providing measures for ensuring BLM's satisfaction with the level of decommissioning that occurs in future decades.

IV. REFERENCES

AECOM

2009 Blythe Solar Power Project Application for Certification. Prepared for Palo Verde I, LLC. Submitted to California Energy Commission. San Diego, California. August.

ATTACHMENT DR-BIO-69-A

FIGURES

Map Location

1 inch = 40 miles

0 40 80 Miles

Blythe Solar Power Project Responses to 12/07/09 Data Requests

Figure DR-BIO-69-1 Regional Map

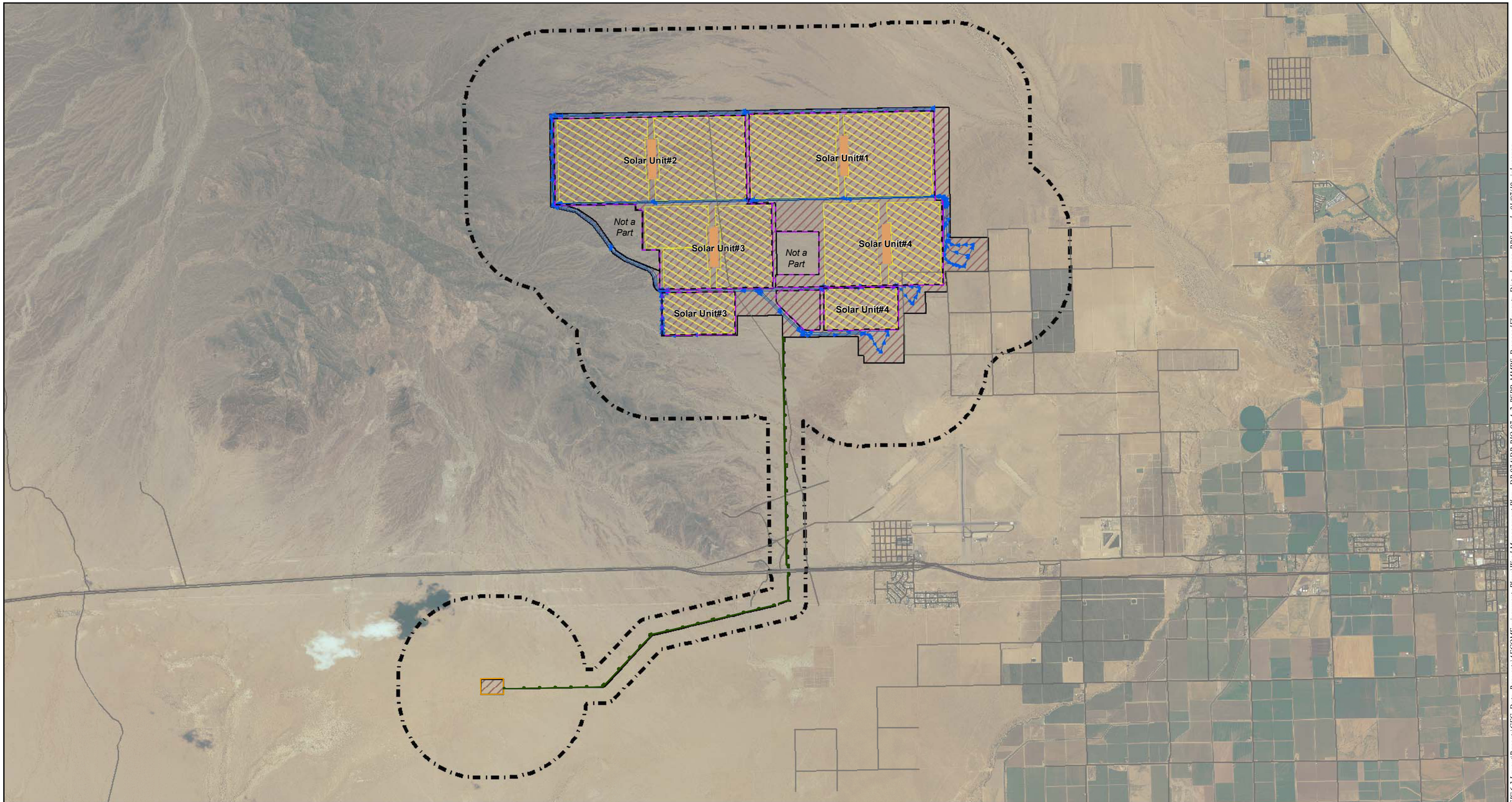
Source: ESRI; AECOM 2009

Solar Millennium

AECOM

Date: January 2010

Path: P:\2009\09080082 Sol Mil Blythe\6.0 GIS\6.3 Layout\Reports\CEC_Data_Requests\AECOMEnvironment_Plans\Weed Management Plan - DR 97\ADR-BIO-97-A-1_WeedManagement_BSSP_RegionalLocation.mxd, 01/07/10, johnsonaa



Map Location

Legend

- Facility Footprint
- Biological Resources Survey Area (BRSA)
- Project Disturbance Area
- Paved Roads

Proposed Project Elements

- Perimeter Security Fence
- Power Block
- Solar Unit
- Substation
- Transmission Line
- Rerouted Drainages

Source: NAIP 2005; AECOM 2009

N W E S

1 inch = 6,000 feet

0 6,000 12,000 Feet

Blythe Solar Power Project Responses to 12/07/09 Data Request

Figure DR-BIO-69-2 Proposed Project Elements and Project Area

Solar Millennium

AECOM

Date: January 2010

Path: P:\20090980082 Sol MI\Blythe\6.0 GIS\6.3 Layout\Reports\CEC_Data_Requests\AECOMEnvironment_Plans\Weed Management Plan - DR 97\ADR-BIO-97-A-2_BSPP_MMPS_ProposedElements_Disturbance_BRSA.mxd, 01/07/10, johnsonaa

DR-VIS-232

Information Required:

Please establish a new KOP in the McCoy Mountains to the west of the Project site in the vicinity of coordinates - Latitude: 33° 39' 48.29" N, Longitude: 114° 48' 52.31" W, viewing to the east-northeast and provide a new KOP analysis and visual simulation (see Attachment DR-VIS 232 for perspective view guidance).

Response:

The approach to evaluating the visual impacts of the Project is based on views from KOPs. KOPs are view receptors that are sensitive and/or considered representative. Views from these locations are the framework for comparing existing visual conditions with photographic simulations of a proposed project.

Based on guidance from BLM, seven KOPs were selected to evaluate the Project's existing conditions and potential visual impacts. The CEC staff's data requests identified four additional KOPs. The representations of existing visual conditions and photograph simulations of the proposed Project are provided as an attachment at the end of this section. The visual contrast rating worksheets are also provided as an attachment at the end of the section.

Due to the addition of wind fences and relocation of the transmission line and substation, updated KOP analyses and simulations for the original seven KOPs (KOPs 1-7) are presented at the end of this section of visual resources data requests.

KOPs (Figure 5.15-1, revised and 5.15-2 revised) are as follows:

- KOP-1 Midland Long-Term Visitor Area (LTVA) Campground,
- KOP-2 Midland Long-Term Visitor Area (LTVA),
- KOP-3 Mesa Bluffs Golf Community,
- KOP-4 Palo Verde Community College,
- KOP-5 Blythe Airport,
- KOP-6 I-10 westbound near the Project transmission line,
- KOP-7 I-10 eastbound near the Project transmission line,
- KOP-8 Black Creek Road near the Project Site and under the Project transmission line,
- KOP-9 BLM Four-wheel Track near the Project Site,
- KOP-10 Base of McCoy Mountains, and
- KOP-11 McCoy Mountains Ridgeline

Existing visual conditions of the view from each KOP were evaluated and documented during fieldwork conducted in June and December 2009.

KOP-10 Base of the McCoy Mountains

Existing Conditions

KOP-10 is located approximately 1.1 miles west of the Project site, approximately 2.3 miles west of the nearest power block facilities and 3.7 miles northwest of the Project transmission line (Figure DR-Vis-232-1a). The foreground-middleground and background views from KOP-10 are typical of the visual character of the natural and cultural landscape of the Palo Verde Mesa at the base of the mountains. The background view is comprised of the Palo Verde Mesa and Big Maria Mountains. The natural features in the view form a strong, coherent pattern, and the visual integrity in the natural landscape is high. The Project would be visible in the foreground-middleground distance zone at this KOP. Although this view would be experienced by a low number of viewers, the foreground-middleground distance zone classification indicates a moderate level of visual sensitivity.

Impacts

The simulation of the view of the Project site and facilities from KOP-10 is shown in Figure DR-VIS-232-1b; the existing view is shown in Figure DR-VIS-232-1a. In the view from KOP-10, the visible features of the Project would be power blocks, solar arrays, wind fences, roadways, the cleared ground plane, and the transmission line as seen from the southwest. Project facilities would be visible in the foreground-middleground and would present a moderate to high level of dominance in the view. The visual contrast of the Project on the overall character of the view is expected to be strong. The effect of the Project on the overall character of the view is expected to be moderate to high. According to the BLM Interim VRM Class II and III management objectives (refer to Federal LORS in AFC Section 5.15.1.1), the overall impact on visual resources from KOP-10 potentially would be significant when the Project is considered in the context of its surroundings.

BLM's designation of this area as a utility corridor may conflict with a literal interpretation of VRM management objectives. Moreover, some viewers may find the view attractive as solar energy facilities represent something they support. Viewers may also see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed landscape, rather than in an otherwise natural scene. The existing transmission structures north and south of I-10 and the I-10 disturbance corridor will contribute to the overall impression of this facility as a positive in an increasingly disturbed landscape.

The KOP-10 BLM Visual Contrast Rating Form is provided at the end of this section.

DR-VIS-233

Information Required:

> Please establish a new KOP in the McCoy Mountains to the west of the Project site in the vicinity of coordinates - Latitude: 33° 39' 51.74" N, Longitude: 114° 49' 48.46" W, viewing to the east-northeast and provide a new KOP analysis and visual simulation (see Attachment DR-VIS-233 for perspective view guidance).

Response:

KOP-11 McCoy Mountains Ridgeline

Existing Conditions

KOP-11 is located approximately 1.7 miles west of the Project site, approximately 2.9 miles west of the nearest power block facilities and 4.5 miles northwest of the transmission line (Figure DR-VIS-233-1a). The foreground-middleground and background views from KOP-11 are typical of the visual character of the natural and cultural landscape of the McCoy Mountains and Palo Verde Mesa. The background view is comprised of the Palo Verde Mesa and Big Maria Mountains. The natural features in the foreground-middleground view form a strong, coherent pattern, and the visual integrity in the natural landscape is high. The Project would be visible in the foreground-middleground distance zone at this KOP. Although this view would be experienced by a low number of viewers, the foreground-middleground distance zone classification and scenery expectations indicate a moderate level of visual sensitivity.

Impacts

The simulation of the elevated view of the Project site and facilities from KOP-11 is shown in Figure DIR-VIS-233-1b; the existing view is shown in Figure DR-VIS-233-1a. In the view from KOP-11, the visible features of the Project would be power blocks, solar arrays, wind fences, roadways, cleared earth, and transmission line as seen from the west. Project facilities would be visible in the foreground-middleground and would present a moderate to high level of dominance in the view. The visual contrast of the Project on the overall character of the view is expected to be strong. The effect of the Project on the overall character of the view is expected to be moderate to high. According to the BLM Interim VRM Class II and III management objective (refer to Federal LORS 5.15.1.1), the overall impact on visual resources from KOP-11 potentially would be significant when the Project is considered in the context of its surroundings.

BLM's designation of this area as a utility corridor may conflict with a literal interpretation of VRM management objectives. Moreover, some viewers may find the view attractive as solar energy facilities represent something they support. Viewers may also see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed landscape, rather than in an otherwise natural scene. The existing transmission structures north and south of I-10 and the I-10 disturbance corridor will contribute to the overall impression of this facility as a positive in an increasingly disturbed landscape.

The KOP-11 BLM Visual Contrast Rating Form is provided at the end of the section.

DR-VIS-234

Information Required:

> In order to present simulations that more accurately capture the actual viewing experiences from the new McCoy Mountains KOPs, please present the existing view photographs and visual simulations as 11" x 17" images at a "life-size scale" when the images are held approximately 18 inches from the eye, so that the landscape and built features in the images match the actual scale of the features in the landscape (when the paper images are viewed at a distance of approximately 18 inches from the eye).

Response:

Please see 11" x 17" images representing existing conditions and simulations for these KOPs (KOP-10 Figure DR-VIS-232-1a for existing condition and DR-VIS-232-1bb for simulated condition; KOP-11 Figure DR-VIS-233-1a for existing condition and DR-VIS-233-1b for simulated condition)

DR-VIS-235

Information Required:

> Please establish a new KOP on Black Creek Road, south of the Project site in the vicinity of coordinates - Latitude: 33° 38' 19.05" N, Longitude: 114° 45' 11.41" W, viewing to the north and provide a new KOP analysis and visual simulation (see DR-VIS-235 for perspective view guidance).

Response:

KOP-8 Black Creek Road near the Project Site and under the Project Transmission Line

Existing Conditions

KOP-8 is located approximately .7 miles south of the Project site, approximately 0.0 miles south of the nearest power block facilities and is under the Project transmission line (Figure DR-VIS-235-1a). The foreground-middleground and background views from KOP-8 are typical of the visual character of the natural and cultural landscape of the Palo Verde Mesa near the mountains. The background view is comprised of the McCoy and Little Maria Mountains. The natural features in the view form a strong, coherent pattern, and the visual integrity in the natural landscape is high. The Project would be visible in the foreground-middleground distance zone at this KOP. Although this view would be experienced by a low number of viewers, the foreground-middleground distance zone classification indicates a moderate level of visual sensitivity.

Impacts

The simulation of the view of the Project site and facilities from KOP-8 is shown in Figure DR-VIS-235-1b; the existing view is shown in Figure DR-VIS-235-1a. In the view from KOP-8, the visible features of the Project would be the transmission line structures, cleared ground plane, solar arrays, and power blocks as seen from the south, the nearest of which would be visible in the very near foreground-middleground and would present a high level of dominance in the view. The visual contrast of the Project on the overall character of the view is expected to be strong. The effect of the Project on the overall character of the view is expected to be high. According to the BLM Interim VRM Class III management objective (refer to Federal LORS 5.15.1.1), the overall impact on visual resources from KOP-8 would potentially be significant when the Project is considered in the context of its surroundings

BLM's designation of this area as a utility corridor may conflict with a literal interpretation of VRM management objectives. Moreover, some viewers may find the view attractive as solar energy facilities represent something they support. Viewers may also see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed landscape, rather than in an otherwise natural scene. The existing transmission structures north and south of I-10 and the I-10 disturbance corridor will contribute to the overall impression of this facility as a positive in an increasingly disturbed landscape.

The KOP-8 BLM Visual Contrast Rating Form is provided at the end of the section.

DR-VIS-236

Information Required:

> In order to present a simulation that more accurately captures the actual viewing experience from the new Black Creek Road KOP, please present the existing view photograph and visual simulation as 11" x 17" images at a "life-size scale" when the images are held approximately 18 inches from the eye, so that the landscape and built features in the images match the actual scale of the features in the landscape (when the paper images are viewed at a distance of approximately 18 inches from the eye).

Response:

Please see 11" x 17" images representing existing condition and simulation for this KOP (KOP-8 Figure DR-VIS-235-1a for existing condition and DR-VIS-235-1b for simulated condition)

DR-VIS-237

Information Required:

> Please establish a new KOP on the four-wheel drive track, south of the Project site in the vicinity of coordinates - Latitude: 33° 38' 48.37" N, Longitude: 114° 46' 23.27" W, viewing to the north and provide a new KOP analysis and visual simulation (see DR-VIS-237 for perspective view guidance).

Response:

KOP-9 BLM Four-wheel Track near the Project Site

Existing Conditions

KOP-9 is located approximately 0.3 miles south of the Project site, approximately 1.2 miles south of the nearest power block facilities and 1.1 miles west of the transmission line (Figure DR-VIS-237-1a). The foreground-middleground and background views from KOP-9 are typical of the visual character of the natural and cultural landscape of the Palo Verde Mesa near the mountains. The background view is comprised of the McCoy and Little Maria Mountains. The natural features in the view form a strong, coherent pattern, and the visual integrity in the natural landscape is high. The Project would be visible in the foreground-middleground distance zone at this KOP. Although this view would be experienced by a low number of viewers, the foreground-middleground distance zone classification indicates a moderate level of visual sensitivity.

Impacts

The simulation of the view of the Project site and facilities from KOP-9 is shown in Figure DR-VIS-237-1b; the existing view is shown in Figure DR-VIS-237-1a. In the view from KOP-9, the visible features of the Project would be the wind fence which would be 50% transparent, cleared ground plane, solar arrays, and power blocks as seen from the southwest, the nearest of which would be visible in the very near

foreground-middleground and would present a high level of dominance in the view. The visual contrast of the Project on the overall character of the view is expected to be strong. The effect of the Project on the overall character of the view is expected to be high. According to the BLM Interim VRM Class III management objective (refer to Federal LORS in AFC Section 5.15.1.1), the overall impact on visual resources from KOP-9 would potentially be significant when the Project is considered in the context of its surroundings.

BLM's designation of this area as a utility corridor may conflict with a literal interpretation of VRM management objectives. Moreover, some viewers may find the view attractive as solar energy facilities represent something they support. Viewers may also see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed landscape, rather than in an otherwise natural scene. The existing transmission structures north and south of I-10 and the I-10 disturbance corridor will contribute to the overall impression of this facility as a positive in an increasingly disturbed landscape.

DR-VIS-238

Information Required:

> In order to present a simulation that more accurately captures the actual viewing experience from the wind fence KOP, please present the existing view photograph and visual simulation as 11" x 17" images at a "life-size scale" when the image is held approximately 18 inches from the eye, so that the landscape and built features in the images match the actual scale of the features in the landscape (when the paper image is viewed at a distance of approximately 18 inches from the eye).

Response:

Please see 11" x 17" images representing existing condition and simulation for this KOP (KOP-9 Figure DR-VIS-237-1a for existing condition and DR-VIS-237-1b for simulated condition)

DR-VIS-239

Information Required:

> Please provide a detailed description and diagram of the wind fence including the fence color.

Response:

The wind fences will be installed to protect the solar arrays from high wind loads. The wind fences will be 30 feet tall and will be placed along the east and west boundaries of each solar field. The wind fences will be made of steel A-frames and a wire mesh, tan in color, much like that used to screen tennis courts. The wind load affects the wind fence in horizontal direction and the dead load only in vertical direction. The fence posts are spaced 4-meters apart, which is the span of the A-frames supporting the wire mesh. The wire mesh is fixed on horizontal steel ropes.

Figure DR-VIS-239-1 illustrates the framing of the wind fence prior to installation of the horizontal steel ropes and wire mesh. The photograph and diagram that follow (DR-VIS-239-2 and DR-VIS-239-3, respectively) further illustrate the look of the wind fence.

DR-VIS-240

Information Required:

> Please provide a site plan at a scale that clearly identifies the location of the various project components including the wind fences.

Response:

Please see Figure DR-VIS-240 for a site plan that identifies the location of the wind fences on the BSPP, as well as other project components.

DR-VIS-241

Information Required:

> Please identify which project components listed in Table 5.15-3 will have non-reflective surface treatments and neutral colors and please specify what those treatments and colors will be.

Response:

Project components are painted either during the manufacturing process or in the field. Project components to be painted include:

- Cooling towers (Bureau of Land Management [BLM] Standard Environmental Color: Covert Green 18-0617 TPX (RGB #7D745E) RGB: 125,116,94 – CMYK: 0,7,25,51);
- Buildings and tanks within the power block (i.e., buildings and tanks – except piping and vessels) (BLM Standard Environmental Color: Covert Green 18-0617 TPX (RGB #7D745E) RGB: 125,116,94 – CMYK: 0,7,25,51);
- Wind fences (tan netting); and
- Transmission monopoles (standard, non-specular grey).

Project components that cannot be painted include:

- Electrical substation equipment (standard non-specular grey);
- Transmission lattice structures (standard, nonspecular grey);
- Piping and vessels within the power block (galvanized steel – grey);
- Pedestals of parabolic troughs (galvanized steel - grey);
- The backs of parabolic troughs (white); and
- HTF insulation wrap (galvanized cladding - grey).

DR-VIS-242

Information Required:

Please provide a color pallet of the anticipated colors.

Response:

Cooling towers, buildings and tanks will be painted, as follows: BLM Standard Environmental Color: Covert Green 18-0617 TPX (RGB #7D745E) RGB: 125,116,94 – CMYK: 0,7,25,51

The backs of parabolic troughs will be white.

All other equipment will have standard manufacturer's colors (specular and non-specular galvanized steel grey).

DR-VIS-243

Information Required:

In all new simulations requested above, please be sure to show facilities with the proposed surface treatments including appropriate color and texture.

Response:

Facilities' surface treatments are shown in the simulations provided at the end of the section.

DR-VIS-244

Information Required:

Although the precise route of the transmission line is not yet known, please add the anticipated linear length of the transmission line, as presently shown, to Table 5.15-3.

Response:

The anticipated linear length of the transmission line as presently proposed is 32,365 feet from the Project central switchyard to the proposed Colorado River substation and this information has been added to Table 5.15-3 as requested.

Revised AFC Table 5.15-3 Equipment Dimensions

Legend / Name	Dimensions (LxWxH) (Feet)/Capacity	Footprint (square feet)
Switch Yard	13 x 92	1,200
Overflow Vessel And Expansion Vessel	124 x 154	19,000 Ea

Revised AFC Table 5.15-3 Equipment Dimensions

Legend / Name	Dimensions (LxWxH) (Feet)/Capacity	Footprint (square feet)
Ullage Coolers And Vessel	79 x 20	1,000
Nitrogen System	Incidental	800
Heat Transfer Fluid Heater	50 x 22 x 80 Stack	1,100
Steam Generators	90 x 10 x 24 Ea	900
Weather Station Building	68 x 68 x 24 (Two Level Bldg)	4,600
Parking	18 x 60	1,080
Balance Of Plant Electrical Building	67 x 67 x 24 (Two Level Bldg)	4,500
Reheaters	32 x 10 Ea	320
MCC Cooling Tower	33 x 40 x 32 High	1,320
Steam Turbine	111 x 50 x 40 High	5,500
Deaerator	125 x 57	7,100
Vacuum System	19 x 35 x 24 High	665
Compressed Air System	25 x 25 x 24 High	625
Generator Circuit Breaker	20 x 30 x 20	600
Warehouse	68 x 146 x 30	10,000
Chemical Injection Skid	46 x 47 x 24	2,000
Generator Step-Up Transformers	48 x 32 x 24	1,500
Emergency Diesel Generator	40 x 10 x 20	800
Cooling Tower	33 x 40 x 32 High	1,300
Water Tank (Ro Concentrate) (Ps1 Only)	45 Dia x 24 High / 250,000 Gal	1,590
Service Water Pumps	23' x 12' x 16'	275
Take Off Tower	30' x 35' x 50'	1,000
Blowdown Tanks	28' Dia Ea	570
Auxiliary Boiler	40' x 73' x 32'	2,900
Air Cooled Condenser	245' x 296' 120' High	73,000
Sample Panel & Lab Building	84' x 48' x 24' High	1,100
Demineralized Water Tank	16' Dia x 24' High	200
Water Treatment Area	192 x 148	28,000
Administration Building	60 x 60 x 24 High	3,600
Control Building	68 x 68 x 24 High	3,900

Revised AFC Table 5.15-3 Equipment Dimensions

Legend / Name	Dimensions (LxWxH) (Feet)/Capacity	Footprint (square feet)
High Voltage Line	4 Dia x 140 High Poles	
Pipe Rack	40 High Misc.	
Treated Water Tank (Also Firewater Storage)	91 Dia x 24 High / 1 Million Gal	6,500
Transmission Line	*32, 365 linear feet*	
Wind Fence (East and West)	*98,200 linear feet*	

DR-VIS-245

Information Required:

Please add the anticipated linear length of the 30-foot tall wind fence to Table 5.15-3.

Response:

The anticipated linear length of the wind fence that is proposed along the east and west boundary of the facility is 98,200 linear feet and has been added to Revised AFC Table 5.15-3 above, as requested. Please see Figure VIS-240 for a representation of the location of the wind fences on the Project site.

DR-VIS-246

Information Required:

Please identify the amount of time that lights are expected to be on at the plant site.

Response:

Security lighting in the BSPP power block and solar fields would operate during non-operating, non-sunlight hours. This ends up to be about 3,600 hours per year, with the following monthly profile.

Month	Hours
January	373
February	301
March	310
April	251
May	253
June	241
July	255
August	272
September	281
October	332

Month	Hours
November	343
December	392

DR-VIS-247

Information Required:

Please provide close-up photographs of SCAs of the type proposed for the SM Palen Project. Please include photographs showing fronts, backs and mounting structures for the SCAs. If SCAs in the photographs differ in detail from those proposed under the SM Palen Project, please describe the differences.

Response:

Figures DR-VIS-247-1 and DR-VIS-247-2 are of the same type of SCAs to be installed on the California projects; therefore, there are no differences to describe.

DR-VIS-248

Information Required:

Please characterize the maximum potential brightness (luminance) of diffuse and spread reflection from mirrors in candela per square meter.

Response:

The diffuse light and spread reflection coming off the parabolic mirrors from most visible angles during most hours of the day will simply reflect the global irradiation of the sky; clouds will also be visible in these reflections. This leads to a lower intensity of light with respect to the sun itself. The intensity of these reflections would be less than that of the instantaneous global diffuse radiation at the respective moment of measure. It can be foreseen that the diffuse reflections could vary from 200,000 candela per square meter in the morning and afternoon to as much as 700,000 depending on scattering due to cloud patterns. In all cases, this would be less intense then staring up at the sky (not at the sun).

It is possible that the back reflected light or light not absorbed by both the envelope and steel annulus of the Heat Collecting Element (HCE) can be seen in the reflection of the parabolic mirror at certain angles above the horizon (i.e., not viewable to someone on the ground). The intensity 11 feet or farther from the front of the vertex of the collector will be the fully diverged direct (not diffuse) incident luminance of the sun, but with a worst-case intensity approximately 20 percent less than the direct luminance of the sun; this would be similar to viewing a body of water from the sky.

DR-VIS-249

Information Required:

Please describe the hours in which the mirror surface of a trough could be visible to an off-site viewer on the ground, and the proportion of surface visible in the course of the day.

Response:

A 30-foot tall wind fence will extend along the entire eastern and western perimeter of all four solar fields. Consequently, along the eastern or western perimeter of the plant, the wind fence will always block the view of the mirror surface for a person standing on the ground at an off-site location. However, a portion of the mirror surface is visible to an off-site viewer on the ground along the north or south perimeter. The closest distance from the collector to a person standing outside the perimeter fence will be approximately 30 feet. The collector has an aperture of 22 feet and sits atop a 13-foot pylon. Depending on where a person is standing and the time of day, different quantities of mirror area are visible. During start up until approximately 9:00 AM, the majority of the mirror surface is visible to viewers positioning themselves to see down the length of a row of collectors. As the collector continues to track the sun throughout the day, less and less of the mirror surface becomes visible. Between 11:00 AM to 1:00 PM, approximately only 20 percent of the mirror surface is visible. As the sun continues to the west, more of the mirror surface becomes visible. Note: The angle of the collector with respect to local time will change throughout the year, thus these are best estimations

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DR-VIS-250

Information Required:

Please provide any available anecdotal information on glare effects of the Kramer Junction and existing SEGS projects, including photographs of off-site diffuse or spread glare, and images of the heated HCEs, as seen from public roads/viewpoints.

Response:

Photo 1 shows glare that is a result of the spread reflection of the envelope of the HCE tube itself. At the BSPP, a wind fence would be located on the east and west sides of the solar fields effectively blocking this view of the collectors. The view shown in Photo 2 is a viewing angle that would be possible at the BSPP from a public area (i.e. looking north or south down the rows of collectors through the security fence). Spread reflection can be seen from the HCE tubes and metal holders and other metal parts. The collector that is planned for use at BSPP will be much taller with larger mirrors than those shown in Photo 2, making it difficult to see most of the HCE during the time of the day shown here. From a farther distance, more of the HCE would be visible, but as a viewer moves away from the collector, the intensity of reflections would be diminished.

Photo 1: HCE Glare, view from area outside perimeter fence, looking east.

Photo 2: HCE Glare, view from area outside perimeter fence, looking northwest.

DR-VIS-251

Information Required:

> Please describe whether any portion of the HCEs would be visible to viewers on the ground, either on- or off-site. Please characterize the maximum potential brightness (luminance) of heated HCEs in candela per square meter.

Response:

As with the visibility of the mirror surface or front of the collector discussed in DR-VIS-249, the amount of the HCE tube that is visible to a viewer on the ground changes throughout the day as the collector tilts to

follow the sun. The HCE tubes will be most visible during mornings and afternoon to a viewer looking down the length of a row of solar collectors; during the hours approaching, at and directly after solar noon, only the ends of the tubes will be visible from the ground off site or on site. The metal annulus of the HCE does not glow when heated, reflections off and within the glass envelope surrounding it makes the HCE appear to glow when tracking the sun. Most of the reflection off the HCE is facing the mirror surface, making it difficult for a viewer on the ground to see.

It is possible for an on-site viewer to get close enough to the collector to experience the reflection at the end of the collector. At this proximity, one could theoretically be exposed to a maximum back reflectance of the HCE envelope. This worst-case intensity could be 93 percent of the sun's direct incidence radiation concentrated with respect to the HCE envelope (42 times) and not transmitted through the envelope (4 percent). During highest radiation levels (of around 1,200 watts per square meter), this leads to a back reflectance of 1,875 watts per square meter or 1.28 million candela per square meter. While this is deemed not eye damaging, maintenance workers and visitors to the site who plan to be in this proximity of the HCE will be required to wear polarized sunglasses. Viewers standing outside the perimeter fence (at least 30 feet away) could only be exposed to a maximum of 1/10th of this luminance when uniform diffuse scatter is assumed at this distance.

DR-VIS-252

Information Required:

> Please explain whether any portion of the directly reflected solar radiation could pass by the HCEs (the steel tube annulus) due to the total divergence factor of the reflectors. If so, how much? Is this amount sufficient to cause any potential retinal damage or flash blindness? Are there measures that would prevent such inadvertent off-site reflection (such as shielding of the HCEs, etc.)?

Response:

During morning and evening movement of the collector from the stow position to tracking position, it is possible that some amount of sunlight diverges from the collector focal point to a point farther in the distance. This could also occur in the event the drive pylon malfunctions, essentially freezing in place. Depending on the time of day and time of year and the distance from the face of the collector, the level of the divergence or the intensity of luminance can vary greatly. It has been calculated in previous submittals[[1]] that beam intensity reaches levels which pose a threat of retinal damage within distances of 100 feet of a collector facing east or west. At the Blythe project, a 30-foot wind fence will be erected along the east and west perimeter of the solar fields. The wind fence effectively acts as large privacy fence, blocking the view into the field.

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[1] San Joaquin Solar 1 & 2 – Application for Certification Volume 2, Appendix L, "Glint and Glare Study," http://www.energy.ca.gov/sitingcases/sjsolar/documents/applicant/afc/AFC_volume_02/

UPDATES FOR ORIGINAL SEVEN KOPS:

Due to the addition of wind fences and relocation of the transmission line and substation, updated since publication of the AFC, KOP analyses and simulations for the original seven KOPs (KOPs 1-7) are presented as below.

KOP-1 Midland Long-Term Visitor Area (LTVA) Campground

Existing Conditions

KOP-1 is located approximately 6.8 miles northeast of the Project site, approximately 7.8 miles northeast of the nearest power block facilities and 9.8 miles northeast of the transmission line (see Figure 5.15-5a). The foreground views from KOP-1 are typical of the visual character of the natural landscape of the Palo Verde Mesa. The background view is comprised of the McCoy Mountain Range. The natural features in the view form a strong, coherent pattern, and the visual integrity in the natural landscape is high. The Project would be visible in the background distance zone at this KOP. Because this view would be experienced by a low number of viewers in the background distance zone, the level of visual sensitivity is moderate to high.

Impacts

The simulation of the view of the Project site and facilities from KOP-1 is shown in Figure 5.15-5b (revised); the existing view is shown in Figure 5.15-5a. In this background view, the prominent visible features of the Project would be the solar array and four sets of power block structures. The transmission line structures would be minimally apparent from this background distance. The neutral color and non-reflective surface of the transmission line structures will reduce their visual contrast with the background, and help them to be absorbed into the overall view to a moderate degree. The plant site features would be visible in the background and would present a moderate level of dominance in the view. The neutral color and non-reflective surface of the Project structures will reduce their visual contrast with their surroundings and help them to be absorbed into the overall view. Due to their distance and location in the middle of the Project site, power block facilities would be moderately visible from this KOP. Therefore, the effect of the Project on the overall character of the view is expected to be moderate.

The general level of visual quality of the view from KOP-1 would change moderately. The presence of the Project features would increase moderately the vividness of the view, would have moderate effect on the overall intactness of the view, and would have moderate effect on the visual unity of the composition of the landscape. According to the BLM Interim VRM Class II, III, and IV management objectives (refer to Federal LORS in AFC Section 5.15.1.1), the overall impact on visual resources from KOP-1 would be less than significant when the Project is considered in the context of its surroundings.

BLM's designation of this area as a utility corridor may conflict with a literal interpretation of VRM management objectives. Moreover, some viewers may find the view attractive as solar energy facilities represent something they support. Viewers may also see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed landscape, rather than in an otherwise natural scene. The existing transmission structures north and south of I-10 and the I-10 disturbance corridor will contribute to the overall impression of this facility as a positive in an increasingly disturbed landscape.

KOP-2 Midland Long-Term Visitor Area (LTVA)

Existing Conditions

KOP-2 is located approximately 4.4 miles northeast of the Project site, approximately 5.7 miles northeast of the nearest power block facilities and 7.5 miles northeast of the transmission line route (Figure 5.15 6a). The foreground-middleground views from KOP-2 are typical of the visual character of the natural landscape of the Palo Verde Mesa. The background view is comprised of the McCoy Mountain Range. The natural features in the view form a strong, coherent pattern, and the visual integrity in the natural landscape is high. The Project would be visible in the background distance zone at this KOP. Because this view would be experienced by a low number of viewers in the background distance zone, the level of visual sensitivity is moderate.

Impacts

The simulation of the view of the Project site and facilities from KOP-2 is shown in Figure 5.15-6b (revised); the existing view is shown in Figure 5.15-6a. In this foreground-middleground and background view, the prominent visible features of the Project would be the solar array and power block structures. The transmission line structures would be minimally apparent from this background distance. The neutral color and non-reflective surface of the transmission line structures will reduce their visual contrast with the background, and help them to be absorbed into the overall view to a moderate degree. The Project site features would be visible in the foreground-middleground and background and would present a moderate level of dominance in the view. The neutral color and non-reflective surface of the Project structures will reduce their visual contrast with their surroundings and help them to be absorbed into the overall view. Due to their distance and location in the middle of the site, power block facilities would be moderately visible from this KOP. Therefore, the effect of the Project on the overall character of the view is expected to be moderate.

The general level of visual quality of the view from KOP-2 would change moderately. The presence of the Project features would increase moderately the vividness of the view, would have moderate effect on the overall intactness of the view, and would have moderate effect on the visual unity of the composition of the landscape. According to the BLM Interim VRM Class II, III, and IV management objective (refer to Federal LORS 5.15.1.1), the overall impact on visual resources from KOP-2 would be less than significant when the Project is considered in the context of its surroundings.

BLM's designation of this area as a utility corridor may conflict with a literal interpretation of VRM management objectives. Moreover, some viewers may find the view attractive as solar energy facilities represent something they support. Viewers may also see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed landscape, rather than in an otherwise natural scene. The existing transmission structures north and south of I-10 and the I-10 disturbance corridor will contribute to the overall impression of this facility as a positive in an increasingly disturbed landscape.

KOP-3 Mesa Bluffs Golf Community

Existing Conditions

KOP-3 is located approximately 4.0 miles east of the Project site, approximately 5.2 miles east of the nearest power block facilities and 6.2 miles northeast of the transmission line (Figure 5.15-7a). The

foreground-middleground views from KOP-3 are typical of the visual character of the cultural landscape of developed portions of the Palo Verde Mesa. The background view is comprised of the McCoy Mountain Range. The cultural and natural features in the view form a discordant pattern, and the visual integrity in the natural landscape is moderate to low. The Project would be visible in the furthest extent of the foreground-middleground distance zone and background distance zones at this KOP. Because this view would be experienced by a low to moderate number of viewers in the far foreground-middleground and background distance zones, the level of visual sensitivity is moderate.

Impacts

The simulation of the view of the Project site and facilities from KOP-3 is shown in Figure 5.15-7b (revised); the existing view is shown in Figure 5.15-7a. In this foreground-middleground and background view, the prominent visible features of the Project would be the solar array and power block structures. The transmission line structures would be minimally apparent from this distance. The neutral color and non-reflective surface of the transmission line structures will reduce their visual contrast with the background, and help them to be absorbed into the overall view to a moderate degree. The Project site features would be visible in the foreground-middleground and background and would present a moderate level of dominance in the view. The neutral color and non-reflective surface of the Project structures will reduce their visual contrast with their surroundings and help them to be absorbed into the overall view. Due to their distance and location in the middle of the site, power block facilities would be moderately visible from this KOP. The presence of existing foreground and middleground structures would help to ameliorate the effects of the transmission line and Project site. Therefore, the effect of the BSPP on the overall character of the view is expected to be moderate.

The general level of visual quality of the view from KOP-3 would change moderately. The presence of the Project features would increase moderately the vividness of the view, would have moderate effect on the overall intactness of the view, and would have moderate effect on the visual unity of the composition of the landscape. According to the BLM Interim VRM Class II, III, and IV management objectives (see Federal LORS in AFC Section 5.15.1.1), the overall impact on visual resources from KOP-3 would be less than significant when the Project is considered in the context of its surroundings.

BLM's designation of this area as a utility corridor may conflict with a literal interpretation of VRM management objectives. Moreover, some viewers may find the view attractive as solar energy facilities represent something they support. Viewers may also see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed landscape, rather than in an otherwise natural scene. The existing transmission structures north and south of I-10 and the I-10 disturbance corridor will contribute to the overall impression of this facility as a positive in an increasingly disturbed landscape.

KOP-4 Palo Verde Community College

Existing Conditions

KOP-4 is located approximately 3.0 miles east of the Project site and approximately 4.2 miles east of the nearest power block facilities and 5.0 miles east of the transmission line (Figure 5.15-8a). The foreground-middleground and background views from KOP-4 are typical of the visual character of the natural and cultural landscape of the Palo Verde Mesa. The background view is comprised of the McCoy Mountain Range. The natural features in the view form a strong, coherent pattern, and the visual integrity in the natural landscape is high. The Project would be visible in the foreground-middleground and background

distance zones at this KOP. Because this view would be experienced by a low to moderate number of viewers in the foreground-middleground and background distance zones, the level of visual sensitivity is moderate.

Impacts

The simulation of the view of the Project site and facilities from KOP-4 is shown in Figure 5.15-8b (revised); the existing view is shown in Figure 5.15-8a. In this foreground-middleground and background view, the prominent visible features of the Project would be the solar array and power block structures. The transmission line structures would be minimally apparent from these foreground-middleground and background distances. The site features would be visible in the background and would present a moderate level of dominance in the view. The neutral color and non-reflective surface of the Project structures will reduce their visual contrast with their surroundings and help them to be absorbed into the overall view. The neutral color and non-reflective surface of the transmission line structures will reduce their visual contrast with the background, and help them to be absorbed into the overall view to a moderate degree. Due to their distance and location in the middle of the plant site, Project power block facilities would be moderately visible from this KOP. Therefore, the effect of the BSPP on the overall character of the view is expected to be moderate.

The general level of visual quality of the view from KOP-4 would change moderately. The presence of the Project features would increase moderately the vividness of the view, would have moderate effect on the overall intactness of the view, and would have moderate effect on the visual unity of the composition of the landscape. According to the BLM Interim VRM Class II, III, and IV management objectives (see Federal LORS in AFC Section 5.15.1.1), the overall impact on visual resources from KOP-4 would be less than significant when the Project is considered in the context of its surroundings.

BLM's designation of this area as a utility corridor may conflict with a literal interpretation of VRM management objectives. Moreover, some viewers may find the view attractive as solar energy facilities represent something they support. Viewers may also see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed landscape, rather than in an otherwise natural scene. The existing transmission structures north and south of I-10 and the I-10 disturbance corridor will contribute to the overall impression of this facility as a positive in an increasingly disturbed landscape.

KOP-5 Blythe Airport

Existing Conditions

KOP-5 is located approximately 2.4 miles south of the Project site, approximately 3.6 miles southeast of the nearest power block facilities and 1.8 miles east of the transmission line (Figure 5.15-9a). The foreground and middleground views from KOP-5 are typical of the visual character of an airport with strong cultural modifications. The background view is comprised of the Palo Verde Mesa and McCoy and Little Maria Mountains. The visual quality of this view is low to moderate; there are no striking or distinctive visual patterns in the view beyond the airport pavements. The visual resources do not form a strong, coherent pattern, and the visual integrity in the natural and human-built landscape is minimal. The Project site facilities would be partially visible in the foreground-middleground and background distance zones and the transmission line would be visible in the foreground-middleground distance zone. Because this view would be experienced by a moderate number of viewers at the airport in the foreground-middleground and background distance zones, the level of visual sensitivity is moderate.

Impacts

The simulation of the view of the Project site and facilities from KOP-5 is shown in Figure 5.15-9b (revised); the existing view is shown in Figure 5.15-9a. The view from KOP-5 is at eye level. In the view from KOP-5, the visible features of the Project would be the transmission line, which would be visible in the foreground-middleground and would present a moderate level of dominance in the view, and the upper extent of the cooling structures at the power blocks, which would be visible in the foreground-middleground and background and would present a low level of dominance. The neutral color and non-reflective surface of the transmission line structures will reduce their visual contrast with the background, and help them to be absorbed into the overall view to a moderate degree. The effect of the Project on the overall character of the view is expected to be moderate.

The presence of existing foreground-middleground structures would help to ameliorate the effects of the transmission line and Project site. According to the BLM Interim VRM Class II, III, and IV management objectives (refer to Federal LORS 5.15.1.1), the overall impact on visual resources from KOP-5 would be less than significant when the Project is considered in the context of its surroundings.

BLM's designation of this area as a utility corridor may conflict with a literal interpretation of VRM management objectives. Moreover, some viewers may find the view attractive as solar energy facilities represent something they support. Viewers may also see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed landscape, rather than in an otherwise natural scene. The existing transmission structures north and south of I-10 and the I-10 disturbance corridor will contribute to the overall impression of this facility as a positive in an increasingly disturbed landscape.

KOP-6 I-10 Westbound Near the Project Transmission Line

Existing Conditions

KOP-6 is located approximately 0.2 miles east of the transmission line (see Figure 5.15-10a [revised]). The foreground-middleground views from KOP-6 are typical of the visual character of the interstate highway with its strong cultural modifications. The background view is comprised of the valley floor. The visual quality of this view is low; there are no striking or distinctive visual patterns in the view. The visual resources do not form a strong, coherent pattern, and the visual integrity in the natural and human-built landscape is minimal. The transmission line would be visible in the foreground-middleground distance zone at this KOP. Because this view would be experienced by motorists traveling I-10 and the influence of land use development is strong, the level of visual sensitivity is moderate.

Impacts

The simulation of the view of the Project site and facilities from KOP-6 is shown in Figures 5.15-10b (revised); the existing view is shown in Figure 5.15-10a (revised). In the view from KOP-6, the visible features of the Project would be the transmission line, which would be visible in the foreground-middleground and would present a moderate level of dominance in the view, and the upper extents of the cooling structures at the power blocks, which would be visible in the background and would present a low level of dominance. The neutral color and non-reflective surface of the transmission line structures will reduce their visual contrast with the background and help them to be absorbed into the overall view to a moderate degree. The visual contrast of the Project on the overall character of the view is expected to be strong.

The effect of the Project on the overall character of the view is expected to be moderate to high. According to the BLM Interim VRM Class III and IV management objective (refer to Federal LORS 5.15.1.1), the overall impact on visual resources from KOP-6 would be less than significant when the Project is considered in the context of its surroundings.

BLM's designation of this area as a utility corridor may conflict with a literal interpretation of VRM management objectives. Moreover, some viewers may find the view attractive as solar energy facilities represent something they support. Viewers may also see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed landscape, rather than in an otherwise natural scene. The existing transmission structures north and south of I-10 and the I-10 disturbance corridor will contribute to the overall impression of this facility as a positive in an increasingly disturbed landscape.

KOP-7 I-10 Looking East Near the Project Transmission Line

Existing Conditions

KOP-7 is representative of the I-10 eastbound view and is located approximately .2 miles west of the transmission line (Figure 5.15-11a [revised]). The foreground-middleground views from KOP-7 are typical of the visual character of the interstate highway with its strong cultural modifications. The background view is comprised of the valley floor. The visual quality of this view is low; there are no striking or distinctive visual patterns in the view. The visual resources do not form a strong, coherent pattern, and the visual integrity in the natural and human-built landscape is minimal. The transmission line would be visible in the foreground-middleground distance zone at this KOP. Because this view would be experienced by motorists traveling I-10 and the influence of land use development is strong, the level of visual sensitivity is moderate.

Impacts

The simulation of the view of the Project site and facilities from KOP-7 is shown in Figure 5.15-11b (revised); the existing view is shown in Figure 5.15-11a (revised). In the view from KOP-7, the visible features of the Project would be the transmission line, which would be visible in the foreground-middleground and would present a moderate level of dominance in the view, and the upper extents of the cooling structures at the power blocks, which would be visible in the background and would present a low level of dominance. The neutral color and non-reflective surface of the transmission line structures will reduce their visual contrast with the background and help them to be absorbed into the overall view to a moderate degree. The visual contrast of the Project on the overall character of the view is expected to be strong.

The effect of the Project on the overall character of the view is expected to be moderate to high. According to the BLM Interim VRM Class III and IV management objectives (refer to Federal LORS 5.15.1.1), the overall impact on visual resources from KOP-7 would be less than significant when the Project is considered in the context of its surroundings.

BLM's designation of this area as a utility corridor may conflict with a literal interpretation of VRM management objectives. Moreover, some viewers may find the view attractive as solar energy facilities represent something they support. Viewers may also see the facility as a landmark and their expectations will be met by the form, meaning, and context of a sensitively designed solar field in an overall disturbed landscape, rather than in an otherwise natural scene. The existing transmission structures north and

south of I-10 and the I-10 disturbance corridor will contribute to the overall impression of this facility as a positive in an increasingly disturbed landscape.

Visual Resources Figures

Figure DR-VIS-239-1
Framing of the Wind Fence Prior to Installation of the Horizontal Steel Ropes and Wire Mesh

Figure DR-VIS-239-2
DR-VIS-239-2 Close up of Wind Fence

Figure DR-VIS-239-3
DR-VIS-239-3 Diagram of Wind Fence

DR-VIS-240
Supporting Figures
Preliminary Site Plan (Location of Wind Fences)
Preliminary Grading Plan Unit #1
Preliminary Grading Plan Unit #2
Preliminary Grading Plan Unit #3
Preliminary Grading Plan Unit #4
Typical Power Block

Figure DR-VIS-247-1
DR-VIS-247-1 Same SCA to be Installed (View from Front)

Figure DR-VIS-247-2
DR-VIS-247-1 Same SCA to be Installed (View from Below)

SUPPLEMENTAL FIGURES

Figure 5.15-1 (revised)
Regional Visibility of the Plant Site

Figure 5.15-2 (revised)
Project Site and Key Observation Points

Figure 5.15-5a
View from KOP-1 Looking Southwest Toward BSPP site – Existing Condition

Figure 5.15-5b
View from KOP-1 Looking Southwest Toward BSPP site – Simulated Condition – Revised

Figure 5.15-6a
View from KOP-2 Looking Southwest Toward BSPP Site – Existing Condition

Figure 5.15-6b
View from KOP-2 Looking Southwest Toward BSPP Site – Simulated Condition – Revised

Figure 5.15-7a
View from KOP-3 Looking West Toward BSPP Site – Existing Condition

Figure 5.15-76b
View from KOP-3 Looking West Toward BSPP Site – Simulated Condition – Revised

Figure 5.15-8a
View from KOP-4 Looking West Toward BSPP Site – Existing Condition

Figure 5.15-8b
View from KOP-4 Looking West Toward BSPP Site – Simulated Condition – Revised

Figure 5.15-9a
View from KOP-5 Looking North Toward BSPP Site – Existing Condition

Figure 5.15-9b
View from KOP-5 Looking North Toward BSPP Site – Simulated Condition – Revised

Figure 5.15-10a
View from KOP-6 Looking West Toward BSPP Transmission Line – Existing Condition – Revised

Figure 5.15-10b
View from KOP-6 Looking West Toward BSPP Transmission Line – Simulated Condition – Revised

Figure 5.15-11a
View from KOP-7 Looking West Toward BSPP Transmission Line – Existing Condition – Revised

Figure 5.15-11b
View from KOP-7 Looking West Toward BSPP Transmission Line – Simulated Condition – Revised

Figure DR-VIS-232-1a – View from KOP-10 Looking East-Northeast Toward BSPP Site – Existing Condition

Figure DR-VIS-232-1b – View from KOP-10 Looking East-Northeast Toward BSPP Site – Simulated Condition

Figure DR-VIS-233-1a – View from KOP-11 Looking East-Northeast Toward BSPP Site – Existing Condition

Figure DR-VIS-233-1b – View from KOP-11 Looking East-Northeast Toward BSPP Site – Simulated Condition

Figure DR-VIS-235-1a – View from KOP-8 Looking North Toward BSPP Site – Existing Condition

Figure DR-VIS-235-1b – View from KOP-8 Looking North Toward BSPP Site – Simulated Condition

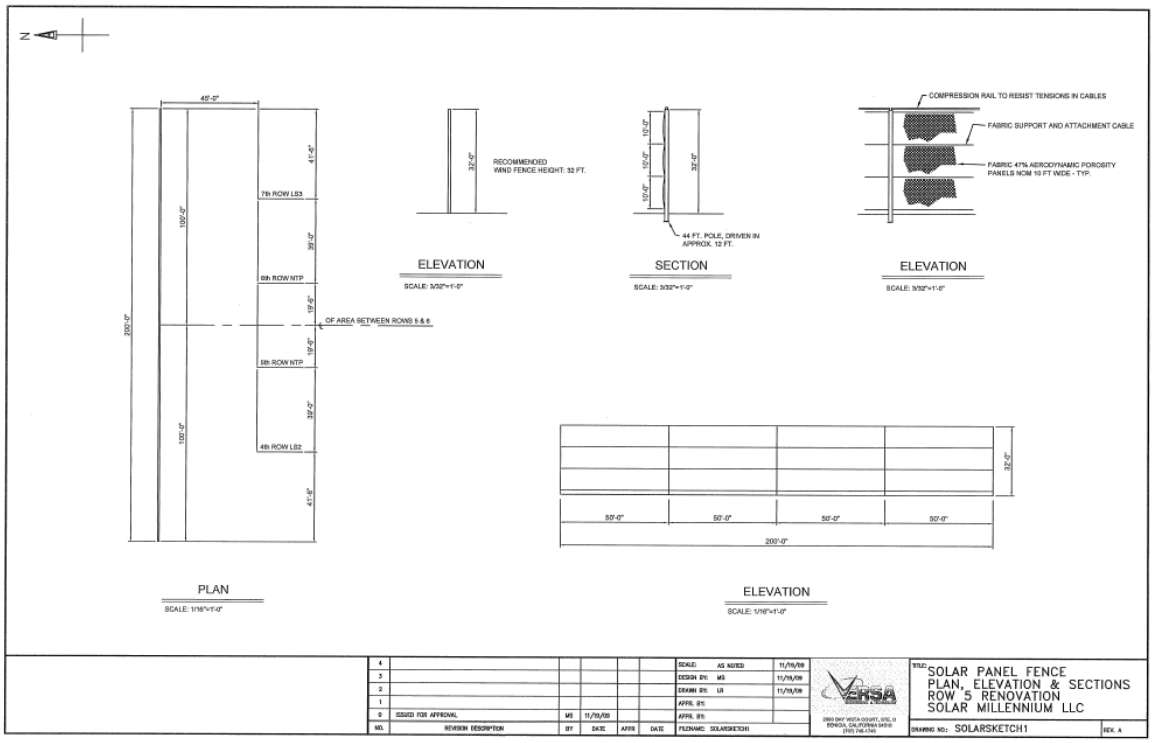
Figure DR-VIS-237-1a – View from KOP-9 Looking North Toward BSPP Site – Existing Condition

Figure DR-VIS-237-1b – View from KOP-9 Looking North Toward BSPP Site – Simulated Condition

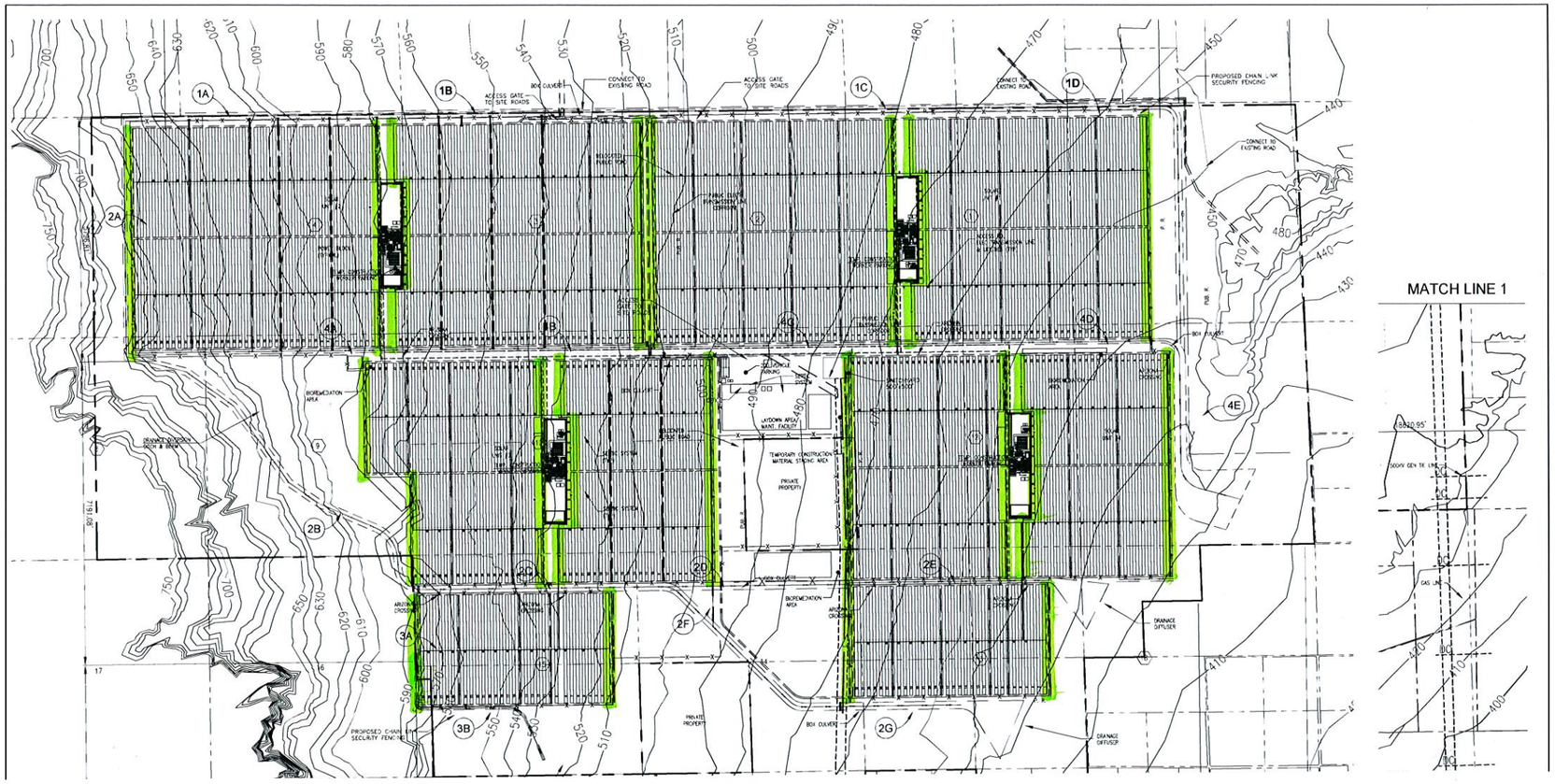
Visual Contrast Rating Worksheet

DR-VIS-239-1 Framing of the Wind Fence Prior to Installation of the Horizontal Steel Ropes and Wire Mesh

DR-VIS-239-2 Close up of Wind Fence



DR-VIS-239-3 Diagram of Wind Fence



TOTAL LENGTH OF WIND FENCE
98,200 LF
WIND FENCE HIGHLIGHTED IN GREEN

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Checked: -
Drawn: TNM
Record Drawing by/date:

Revisions:

#	DATE	DESCRIPTION

Prepared for:

Chevron
345 California Street
San Francisco, California 94104

Solar Millennium LLC

LEGEND:

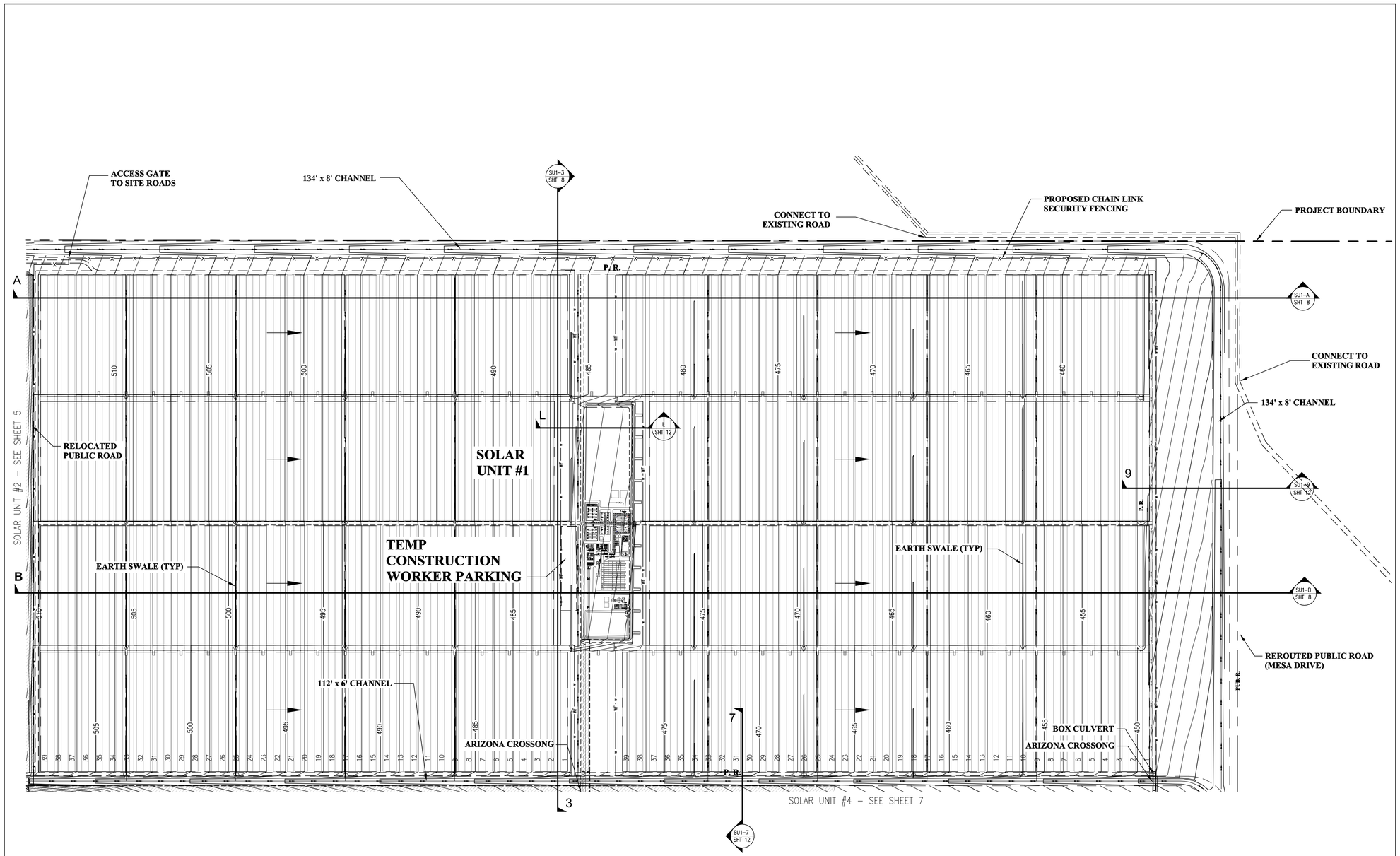
- SOLAR BLOCK LOCATION
- BALANCE OF PLANT FACILITIES
- PROPOSED ACCESS ROAD (PAVED)
- PROPOSED ACCESS ROAD (GRAVEL)
- PROPOSED SILT FENCE
- PROPOSED FIBER ROLLS
- PROPOSED EARTH BERM
- PROPOSED GAS PIPELINE
- PROPOSED 500kV GEN TIE LINE
- PROPOSED TELEPHONE LINE
- PROPOSED FENCE
- PROPOSED WIND FENCE
- PROPOSED CONTOURS
- PROPOSED STREAM LINE
- PROPOSED FLOOD CONTROL
- EXISTING PAVED ROAD
- EXISTING GRAVEL ROAD
- EXISTING CONTOURS
- EXISTING STREAM LINE
- SITE BOUNDARY
- PUB. R. PUBLIC ROAD
- P.R. PRIVATE ROAD
- DC DRANAGE CULVERT

Blythe Solar Power Project

Riverside County, California

Preliminary Site Plan

Date: 8/07/09
Sheet: 3 OF 18



EARTHWORK		
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SCALE IN FEET

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REGISTERED PROFESSIONAL ENGINEER
WILLIAM C. HAGMAIER
No. 44325
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

Designed: TNM
Checked: -
Drawn: TNM
Record Drawing by/date:

Revisions:

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Solar Millennium LLC

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- FR — PROPOSED FIBER ROLLS
- EB — PROPOSED EARTH BERM
- PROPOSED GAS PIPELINE
- PROPOSED 500kV GEN TIE LINE
- PROPOSED TELEPHONE LINE
- PROPOSED FENCE
- PROPOSED WIND FENCE
- 880 — PROPOSED CONTOURS
- PROPOSED STREAM LINE
- PROPOSED FLOOD CONTROL
- EXISTING PAVED ROAD
- EXISTING GRAVEL ROAD
- 880 — EXISTING CONTOURS
- EXISTING STREAM LINE
- SITE BOUNDARY
- PUB. R. — PUBLIC ROAD
- P.R. — PRIVATE ROAD

Blythe Solar Power Project

Riverside County, California

Preliminary Grading Plan Unit #1

Date: 8/07/09
Sheet: 4 OF 18

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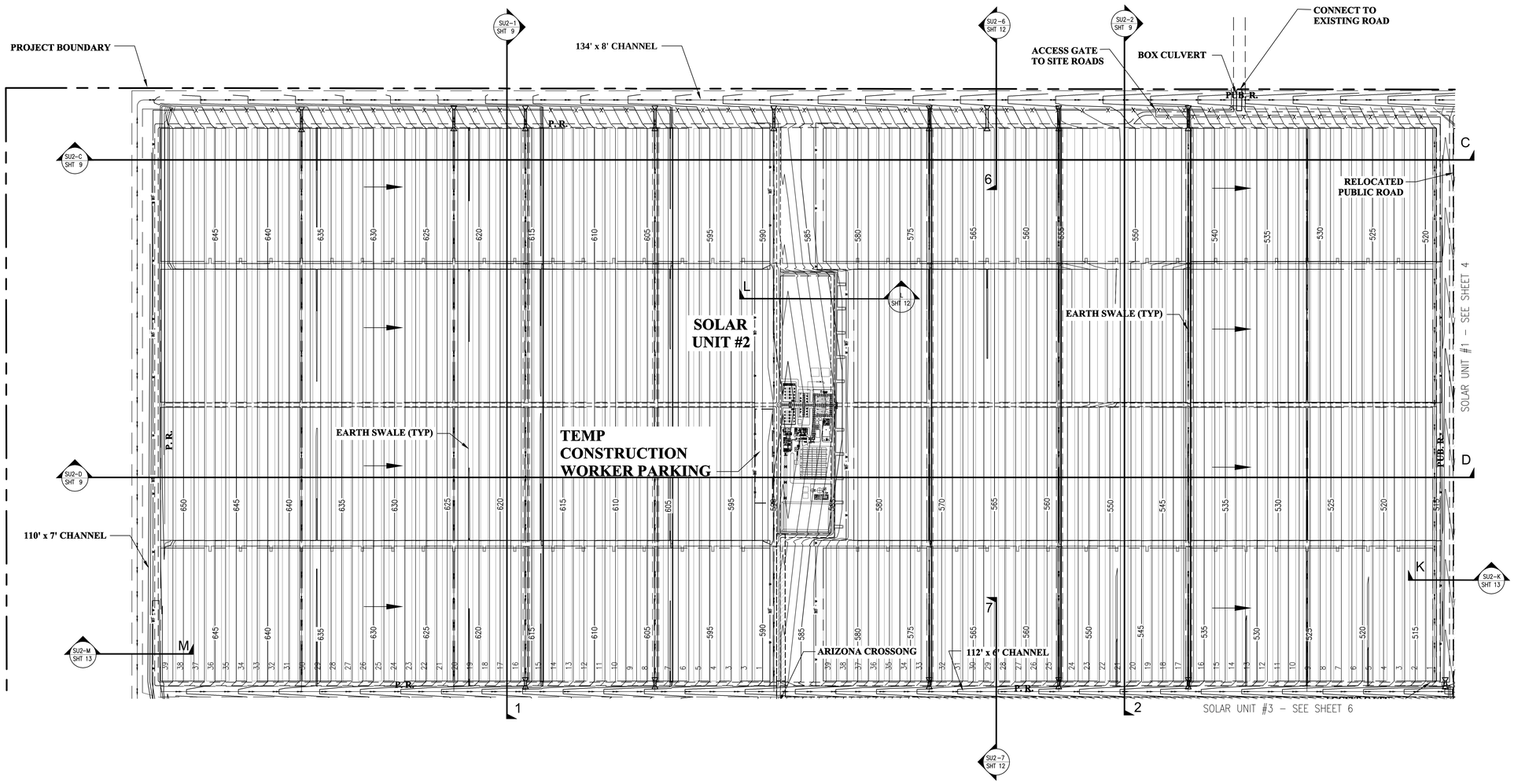

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Solar Millennium LLC

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- SOLAR BLOCK LOCATION
- BALANCE OF PLANT FACILITIES
- PROPOSED ACCESS ROAD (PAVED)
- PROPOSED ACCESS ROAD (GRAVEL)
- PROPOSED SILT FENCE
- FR — PROPOSED FIBER ROLLS
- EB — PROPOSED EARTH BERM
- PROPOSED GAS PIPELINE
- PROPOSED 500kV GEN TIE LINE
- PROPOSED TELEPHONE LINE
- PROPOSED FENCE
- PROPOSED WIND FENCE
- PROPOSED CONTOURS
- PROPOSED STREAM LINE
- PROPOSED FLOOD CONTROL
- EXISTING PAVED ROAD
- EXISTING GRAVEL ROAD
- EXISTING CONTOURS
- EXISTING STREAM LINE
- SITE BOUNDARY
- PUB. R. — PUBLIC ROAD
- P.R. — PRIVATE ROAD

Blythe Solar Power Project

Riverside County, California

Preliminary Grading Plan Unit #2

Date: 8/07/09
Sheet: 5 OF 18

DWG: P:\60162526 Solar Millennium\Blythe\CAD\Civil\Sheet\C-005 Preliminary Grading Plan Unit#2.dwg Layout Name: Layout - Plotted by: Ward, Jessica (Orange) Date: 8/7/2009 - 11:10 AM
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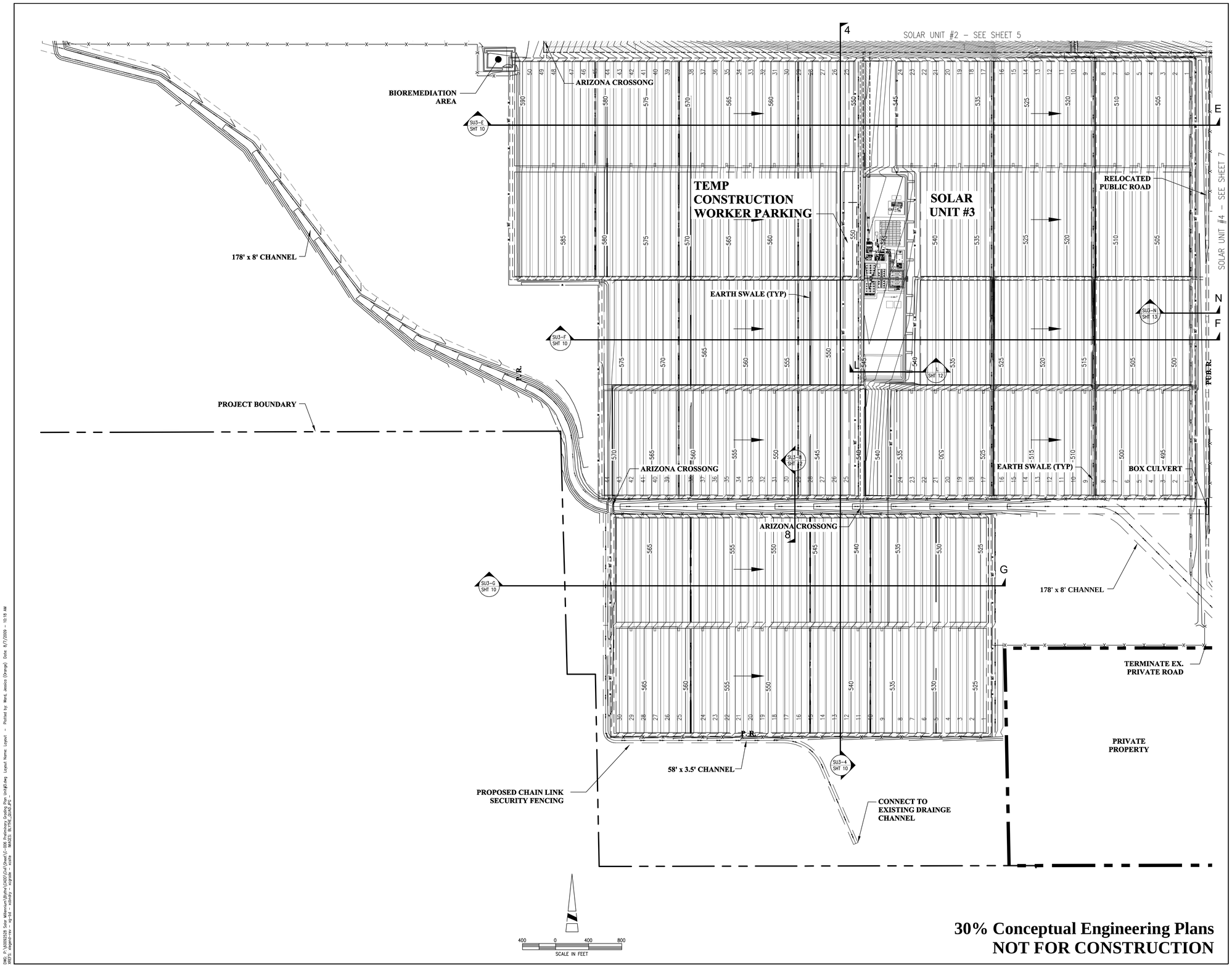

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REGISTERED PROFESSIONAL ENGINEER
WILLIAM C. HAGMAIER
No. 44325
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

Designed: TNM
Checked: -
Drawn: TNM
Record Drawing by/date:

Revisions:

#	DATE	DESCRIPTION

Prepared for:

Chevron
345 California Street
San Francisco, California 94104

Solar Millennium LLC

LEGEND:

- SOLAR BLOCK LOCATION
- BALANCE OF PLANT FACILITIES
- PROPOSED ACCESS ROAD (PAVED)
- PROPOSED ACCESS ROAD (GRAVEL)
- PROPOSED SILT FENCE
- FR — PROPOSED FIBER ROLLS
- EB — PROPOSED EARTH BERM
- PROPOSED GAS PIPELINE
- PROPOSED 500kV GEN TIE LINE
- PROPOSED TELEPHONE LINE
- PROPOSED FENCE
- PROPOSED WIND FENCE
- 580 — PROPOSED CONTOURS
- PROPOSED STREAM LINE
- PROPOSED FLOOD CONTROL
- EXISTING PAVED ROAD
- EXISTING GRAVEL ROAD
- 580 — EXISTING CONTOURS
- EXISTING STREAM LINE
- SITE BOUNDARY
- PUB. R. — PUBLIC ROAD
- P.R. — PRIVATE ROAD

Blythe Solar Power Project

Riverside County, California

Preliminary Grading Plan Unit #3

Date: 8/07/09
Sheet: 6 OF 18

DWG: P:\60092528 Solar Millennium\Blythe\CADD\Civil\Sheet\C-009 Preliminary Grading Plan Unit#3.dwg Layout Name: Layout – Plotted by: Ward, Jessica (Orange) Date: 8/7/2009 – 10:18 AM
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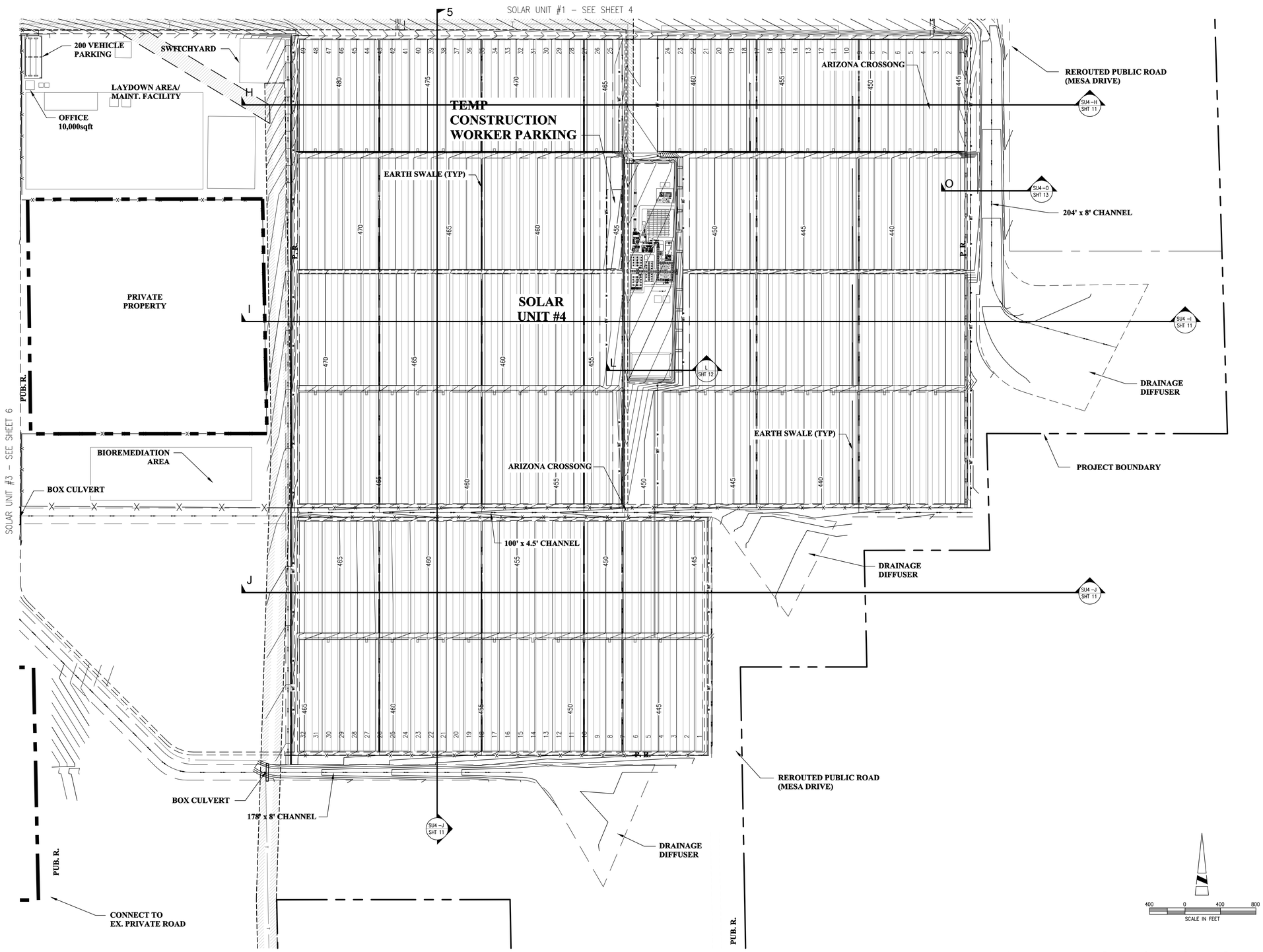

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Revisions:

#	DATE	DESCRIPTION

Prepared for:

Chevron
345 California Street
San Francisco, California 94104

Solar Millennium LLC

LEGEND:

- SOLAR BLOCK LOCATION
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- PROPOSED ACCESS ROAD (PAVED)
- PROPOSED ACCESS ROAD (GRAVEL)
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- PROPOSED 500kV GEN TIE LINE
- PROPOSED TELEPHONE LINE
- PROPOSED FENCE
- PROPOSED WIND FENCE
- 480 PROPOSED CONTOURS
- PROPOSED STREAM LINE
- PROPOSED FLOOD CONTROL
- EXISTING PAVED ROAD
- EXISTING GRAVEL ROAD
- 480 EXISTING CONTOURS
- EXISTING STREAM LINE
- SITE BOUNDARY
- PUB. R. PUBLIC ROAD
- P.R. PRIVATE ROAD

Blythe Solar Power Project

Riverside County, California

Preliminary Grading Plan Unit #4

Date: 8/07/09

Sheet: 7 OF 18

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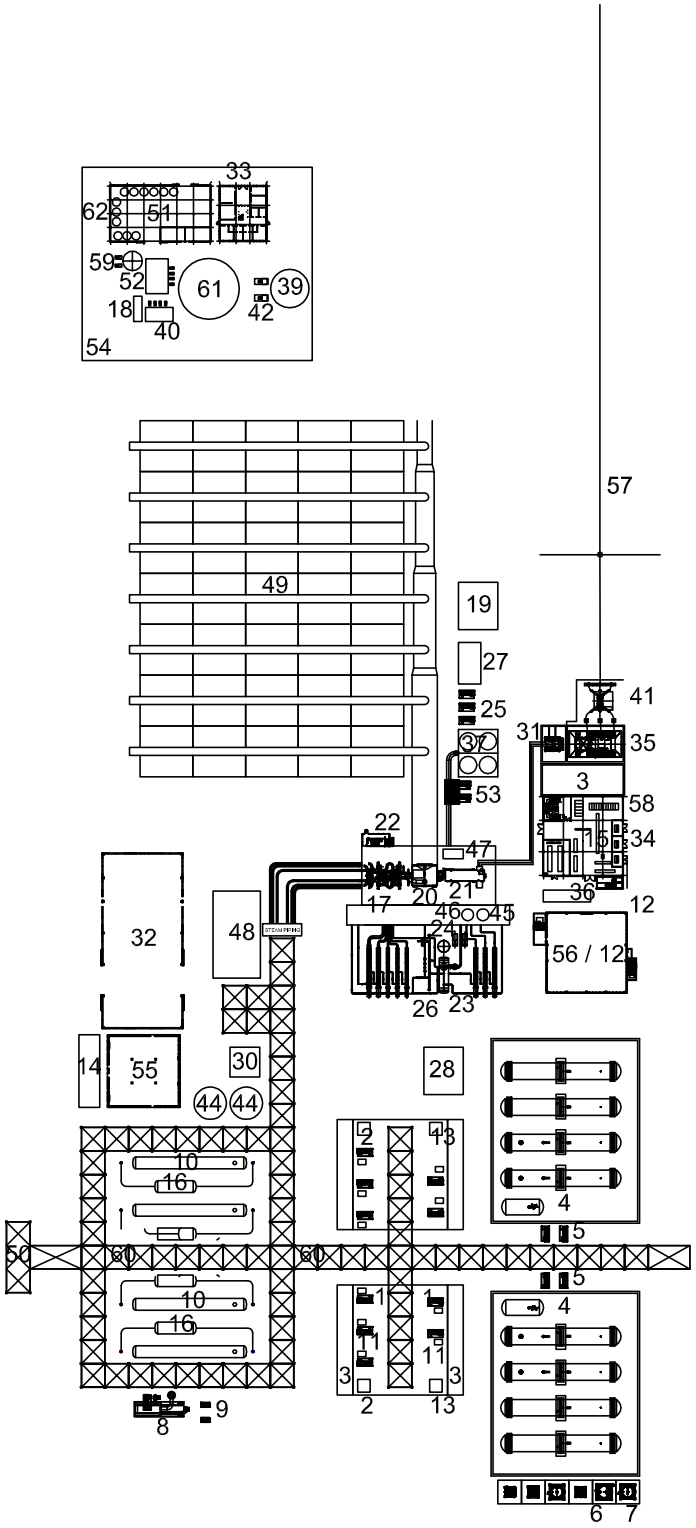
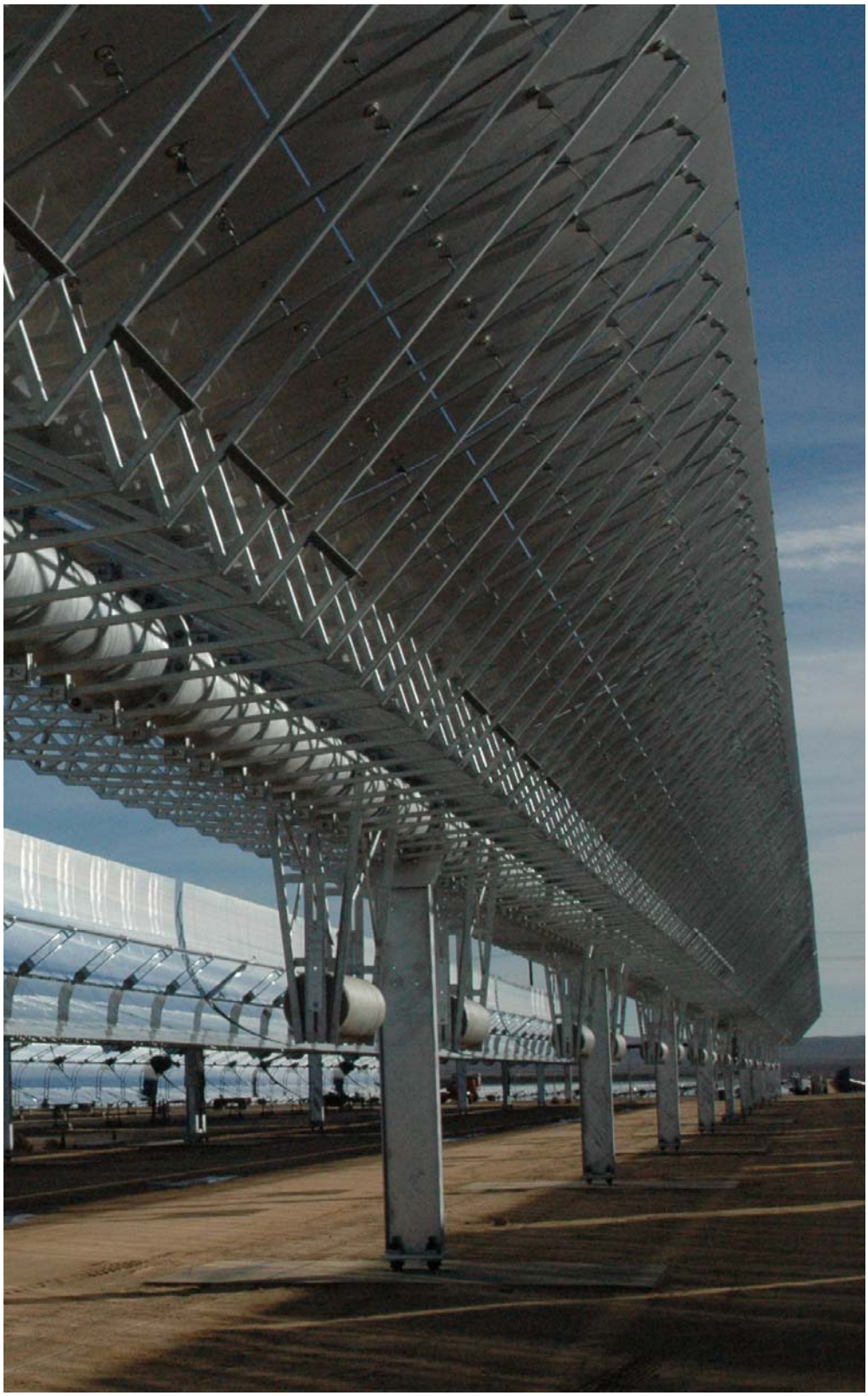


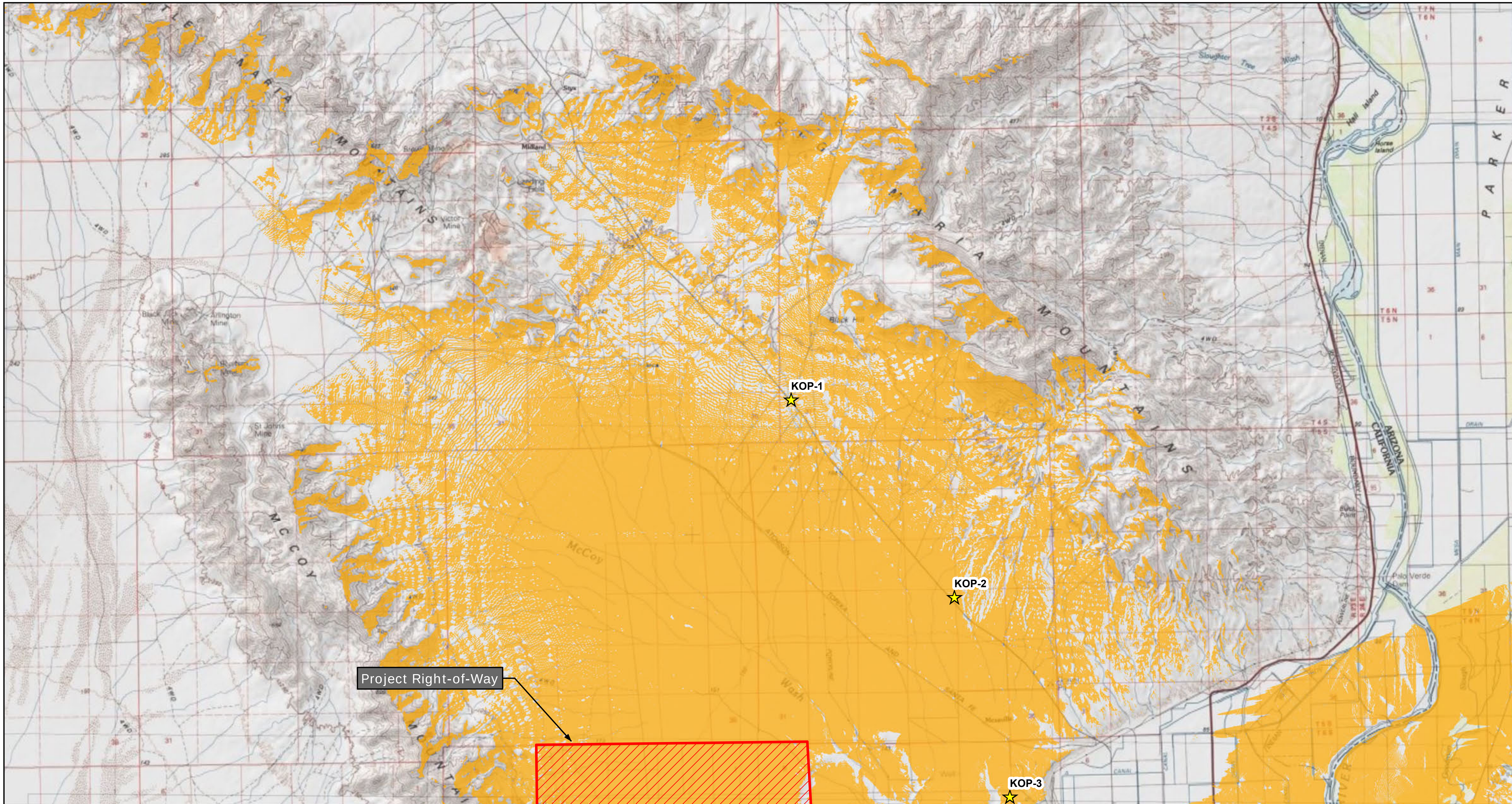
#	LEGEND / NAME	DIMENSIONS (LxWxH) / CAPACITY	FTPRINT (S
1	HTF MAIN PUMPS	INCIDENTAL	
2	HTF PUMPS SEAL OIL UNIT	INCIDENTAL	
3	SWITCH YARD	13' X 92'	1200SF
4	OVERFLOW VESSEL AND EXPANSION VESSEL	124' X 154'	19KSF EA
5	OVERFLOW RETURN PUMPS	INCIDENTAL	
6	ULLAGE COOLERS AND VESSEL	59' X 20'	1200SF
7	NITROGEN SYSTEM	INCIDENTAL	800SF
8	HTF HEATER	50' X 22' X 80' STACK	1100SF
9	FREEZE PROTECTION PUMPS	INCIDENTAL	
10	STEAM GENERATORS	90' X 10' X 24' EA	900SF
11	VARIABLE FREQUENCY DRIVE SYSTEM	INCIDENTAL	
12	WEATHER STATION BUILDING	68' X 68' X 24' (TWO LEVEL BLDG)	4600SF
13	HTF PUMPS LUBE OIL UNIT	INCIDENTAL	
14	NOT USED		
15	BALANCE OF PLANT ELECTRICAL BUILDING	67' X 67' X 24' (TWO LEVEL BLDG)	4500SF
16	REHEATERS	32' X 10' EA	320SF
17	EXCITATION TRANSFORMER	NOT FOUND	
18	WATER TREATMENT MCCS	INCIDENTAL	
19	MCC COOLING TOWER	33' X 40' X 32' HIGH	1320
20	STEAM TURBINE	111' X 50' X 40' HIGH	5500SF
21	GLAND CONDENSER	INCIDENTAL	
22	LUBE OIL CONSOLE	INCIDENTAL	
23	DEAERATOR	125' X 57'	7100SF
24	FEEDWATER PUMPS	INCIDENTAL	
25	CONDENSATE PUMPS	INCIDENTAL	
26	LP/HP PRE-HEATERS	INCIDENTAL	
27	VACUUM SYSTEM	19' X 35' X 24' HIGH	665
28	DIRTY WASTE WATER SUMP, OIL WATER SEPARATOR	INCIDENTAL	
29	FREE FOR USE		
30	COMPRESSED AIR SYSTEM	25' X 25' X 24' HIGH	625 SF
31	GENERATOR CIRCUIT BREAKER	20' X 30' X 20'	600 SF
32	WAREHOUSE	68' X 146' X 30'	10K SF
33	CHEMICAL INJECTION SKID	46' X47' X 24'	2K SF
34	MAIN AUXILIARY TRANSFORMERS	INCIDENTAL	
35	GENERATOR STEP-UP TRANSFORMERS	48' X 32' X 24'	1,500 SF
36	EMERGENCY DIESEL GENERATOR	40' X 10' X 20'	400 SF
37	COOLING TOWER	33' X 40' X 32' HIGH	1,300 SF
38	FREE FOR USE		
39	WATER TANK (RO CONCENTRATE) (BSP1 & 3 ONLY)	50' DIA X 24' HIGH / 300,000 GAL	1,600 SF
40	SERVICE WATER PUMPS	23' X 12' X 16'	275 SF
41	TAKE OFF TOWER	30' X 35' X 50'	1,000 SF
42	FIRE PROTECTION PUMPS	INCIDENTAL	
43	FREE FOR USE		
44	BLOWDOWN TANKS	28' DIA EA	570 SF
45	TURBINE DRAINS TANK	INCIDENTAL	
46	CONDENSATE TANK	INCIDENTAL	
47	STG PACKAGED ELECTRONIC AND ELECTRICAL CONTROL COMPARTMENT	INCIDENTAL	
48	AUXILIARY BOILER	40' X 73' X 32'	2900 SF
49	AIR COOLED CONDENSER	245' X 296' 150' HIGH	73K SF
50	HTF PIPING CONNECTION TO SOLAR FIELD	INCIDENTAL	
51	SAMPLE PANEL & LAB BUILDING	84' X 48' X 24' HIGH	4,000 SF
52	DEMINERALIZED WATER TANK	16' DIA X 24' HIGH	200 SF
53	AUXILIARY COOLING WATER PUMPS	INCIDENTAL	
54	WATER TREATMENT AREA	192' X 148'	28K SF
55	ADMINISTRATION BUILDING	60' X 60' 24' HIGH	3,600 SF
56	CONTROL BUILDING	68' X 68' 24' HIGH	4,600 SF
57	HIGH VOLTAGE LINE	4' DIA 145' HIGH POLES	
58	SUS TRANSFORMER & 480 V BUS	INCIDENTAL	
59	DEMINERALIZED WATER PUMPS	INCIDENTAL	
60	PIPE RACK	40' HIGH MISC.	
61	TREATED WATER TANK (also FIREWATER STORAGE)	91' DIA X 24' HIGH / 1 MILLION GAL	6,500 SF
62	CHEMICAL FEED CANOPY	NOT FOUND	
63	NOT USED		
64	NOT USED		
65	NOT USED		
66	NOT USED		
70	NOT USED		
71	NOT USED		

TYPICAL
BLYTHE POWER BLOCK

DR-VIS-247-1 Same SCA to be Installed (View from Front)



DR-VIS-247-2 Same SCA to be Installed (View from Below)



Map Location

Legend

Project Right-of-Way

Transmission Line Route

Substations

Key Observation Points

Project Visible

1 inch = 10,000 feet

10,000 5,000 0 10,000 Feet

N W E S

Blythe Solar Power Project
Figure 5.15-1(revised)
Regional Visibility of
the Plant Site
Mapsheet 1 of 2

Solar Millennium

AECOM

Date: January 2010

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KOP-11
KOP-10
KOP-4
KOP-9
KOP-8
Project Right-of-Way
KOP-5
KOP-7
KOP-6
Substation Location
Transmission Line Route

Map Location

Legend

- Project Right-of-Way
- Substations
- Project Visible
- Transmission Line Route
- Key Observation Points

1 inch = 10,000 feet

10,000 5,000 0 10,000 Feet

Blythe Solar Power Project
Figure 5.15-1(revised)
Regional Visibility of the Plant Site
Mapsheet 2 of 2

Solar Millennium

AECOM

Date: January 2010

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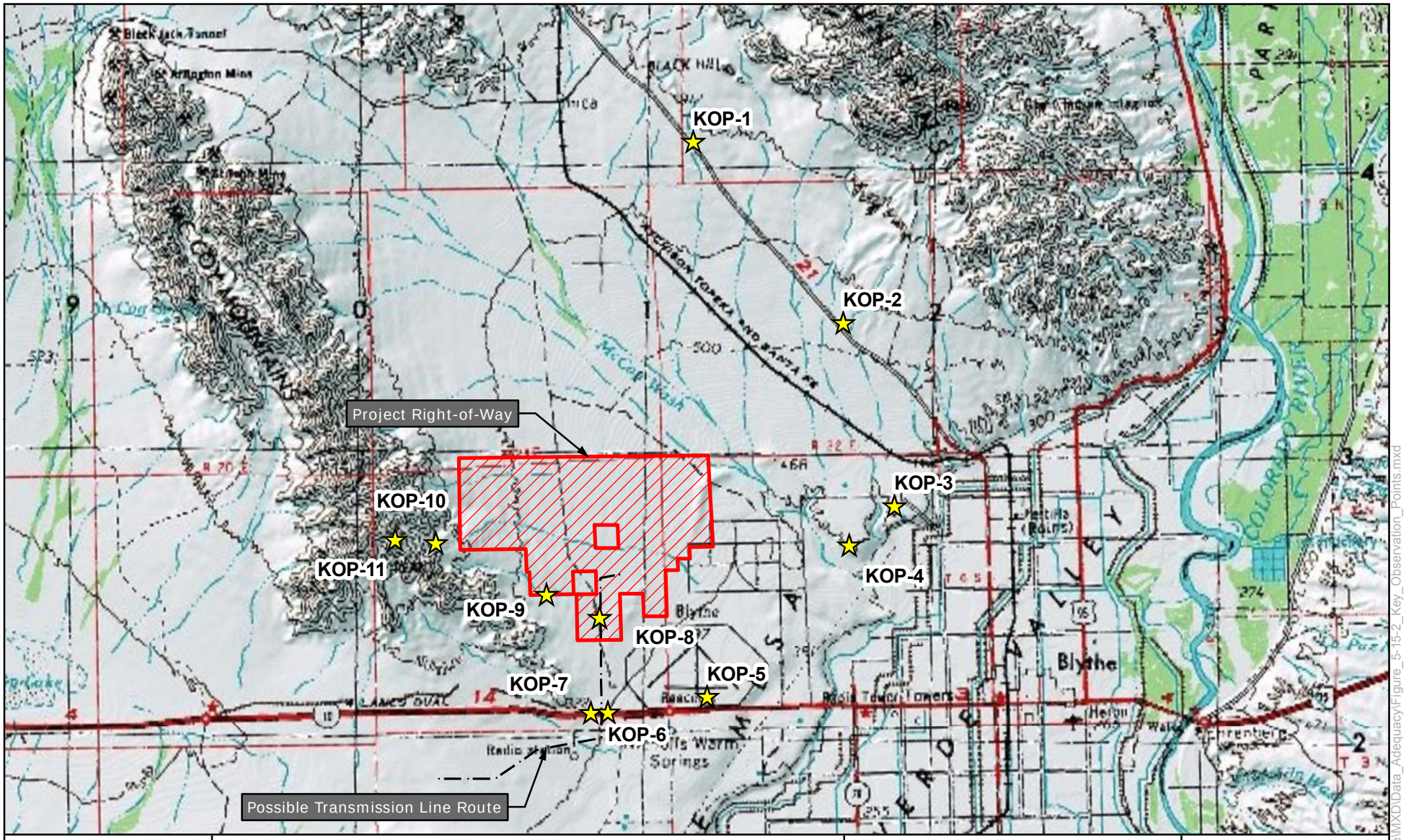

Blythe Solar Power Project

Figure 5.15-2 (Revised)
Project Site and
Key Observation Points

Solar Millennium

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Date: January 2010

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Figure 5.15-5a - View from KOP-1 Looking Southwest Toward BSPP Site - Existing Condition

Figure 5.15-5b - View from KOP-1 Looking Southwest Toward BSPP Site – Simulated Condition – Revised

Figure 5.15-6a - View from KOP-2 Looking Southwest Toward BSPP Site - Existing Condition

Figure 5.15-6b - View from KOP- 2 Looking Southwest Toward BSPP Site – Simulated Condition – Revised

Figure 5.15-7a - View from KOP- 3 Looking West Toward BSPP Site - Existing Condition

Figure 5.15-7b - View from KOP- 3 Looking West Toward BSPP Site – Simulated Condition – Revised

Figure 5.15-8a - View from KOP- 4 Looking West Toward BSPP Site - Existing Condition

Figure 5.15-8b - View from KOP- 4 Looking East Toward BSPP Site – Simulated Condition – Revised

Figure 5.15-9a - View from KOP- 5 Looking North Toward BSPP Site - Existing Condition

Figure 5.15-9b - View from KOP- 5 Looking North Toward BSPP Site – Simulated Condition – Revised

Figure 5.15-10a - View from KOP- 6 Looking West Toward BSPP Transmission Line - Existing Condition - Revised

Figure 5.15-10b-View from KOP- 6 Looking West Toward BSPP Transmission Line–Simulated Condition–Revised

Figure 5.15-11a - View from KOP- 7 Looking East Toward BSPP Transmission Line - Existing Condition - Revised

Figure 5.15-11b-View from KOP-7 Looking East Toward BSPP Transmission Line–Simulated Condition–Revised

DR VIS-232-1a - View from KOP- 10 Looking East-Northeast Toward BSPP Site – Existing Condition

DR VIS-232-1b- View from KOP- 10 Looking East-Northeast Toward BSPP Site – Simulated Condition

DR VIS-233-1a - View from KOP- 11 Looking East-Northeast Toward BPSPP Site – Existing Condition

DR VIS-233-1b - View from KOP- 11 Looking East-Northeast Toward BSPP Site – Simulated Condition

DR VIS-235-1a - View from KOP- 8 Looking North Toward BSPP Site – Existing Condition

DR VIS-235-1b - View from KOP- 8 Looking North Toward BSPP Site – Simulated Condition

DR VIS-237-1a - View from KOP- 9 Looking North Toward BSPP Site – Existing Condition

DR VIS-237-1b View from KOP- 9 Looking North Toward BSPP Site – Simulated Condition