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## Data Adequacy Supplement Attachments:

Attachment A : Water Resources Industrial Storm Water Pollution Prevention Plan (Addendum)	
Attachment B: Water Resources Report of Waste Discharge	
Attachment C: Soils Erosion Calculation Records	
Attachment D: Biological Resources Part 1: Wetlands Delineation Maps Part 2: California Natural Diversity Database	
Attachment E: Transmission System Design Part 1: Figures Part 2: Supporting Documentation	
Attachment F: Visual Resources Figures	
Attachment G: Water Resources Part 1: Annual Report Part 2: 9,380 AFY Water Rights ( <i>A portion of this attachment is submitted under separate confidential cover.</i> ) Part 3: 224 AFY Water Rights ( <i>A portion of this attachment is submitted under separate confidential cover.</i> )  Part 4: 874 AFY Water Rights ( <i>A portion of this attachment is submitted under separate confidential cover.</i> )	



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## Air Quality

### Air Quality: Appendix B (g)(1)

#### Information Required:

Please provide a discussion of the proposed mitigation measures and monitoring required to mitigate the potentially adverse impacts from operation and maintenance emissions of NO<sub>x</sub>, VOC, PM<sub>10</sub> and PM<sub>2.5</sub>.

#### Response:

AFC Section 5.2.3 presents a discussion of the control technologies proposed for use on the site equipment and processes (AFC pp. 5.2-17 through 5.2-19). AFC Appendix C.1 presents detailed information on the proposed site operational equipment and emissions with the proposed BACT control systems. AFC Appendix C.6 presents data on the evaluation of Best Available Control Technology for each of the proposed operational systems, i.e., IC engines, boilers, cooling towers, HTF systems, etc.

Operational emissions from maintenance activities are minimal and detailed in Appendix C.1 of the AFC. Estimated exhaust emissions are achieved by the meeting CARB/EPA motor vehicle standards. Additionally, fugitive dust emissions are controlled by using dust suppression methods and limiting onsite vehicle speeds.

The Project's operational emissions are less than the offset thresholds of the Mojave Desert Air Quality Management District (MDAQMD) offset trigger levels for NO<sub>x</sub>, VOC, PM<sub>10</sub>/PM<sub>2.5</sub> and SO<sub>2</sub>. Thus, offsets for these pollutants are not proposed for mitigation. The Project proposes to mitigate the operational and construction emissions through use of some of the following methods:

- The Project's operational emissions will employ the Best Available Control Technology (BACT) which will limit emissions of all non-attainment pollutants and their precursors.
- Fugitive sources of PM<sub>10</sub>/2.5 will be further mitigated through the use of wind erosion operational practices such as windbreaks, water, and dust suppressants in areas disturbed by vehicles or wind. Additionally, limiting vehicle speeds is also proposed.
- Providing funding to the Carl Moyer program on a dollar/ton basis. The Carl Moyer program provides incentive grants for cleaner-than-required engines, equipment and other sources of pollution providing early or extra emission reductions. Eligible projects include cleaner on-road, off-road, marine, locomotive and stationary agricultural pump engines. The program achieves near-term reductions in emissions of NO<sub>x</sub>, PM<sub>10</sub>/2.5, and reactive organic gas (ROG). Funding could be provided on a dollar per ton basis at a rate that is similar to the current ERC market rates.

The applicant will work with the CEC to identify a mitigation strategy that best suits the needs of the Project for all phases and aspects.

Monitoring of the operational emissions will be incorporated in the MDAQMD permit and may include fuel use monitors, record keeping, and conductivity monitoring for cooling tower emissions of PM. Additionally, VOC leak detection and repair activities may be incorporated for the HTF processes at the site in order to minimize fugitive leaks of VOCs.

**Air Quality: Appendix B (g)(8)(C)**

**Information Required:**

Please provide a discussion of the proposed mitigation measures and monitoring needed to limit the criteria pollutant emissions of NO<sub>x</sub>, VOC, PM<sub>10</sub> and PM<sub>2.5</sub> from operation and maintenance activities. Response to this item can be combined with that for item B (g)(1) above.

**Response:**

Please see above response for Appendix B (g)(1).

**Air Quality: Appendix B (g)(8)(K)**

**Information Required:**

Please provide a detailed discussion of the mitigation measures that will be proposed to mitigate operations and maintenance air emissions of pollutants that currently exceed ambient air quality standards (NO<sub>x</sub> and VOC as ozone precursors, PM<sub>10</sub>, and PM<sub>2.5</sub>), but are not subject to offset requirements under the district's new source review rule.

**Response:**

Please see above response for Appendix B (g)(1).

## Biological Resources

### Biological Resources: Appendix B (g)(13)(B)(iii)

#### Information Required:

Please provide aerial photos or wetland delineation maps at a scale of 1:2,400 showing any potential jurisdictional and non-jurisdictional wetlands and Waters of the U.S. and State delineated out to at least 250 feet from the edge of disturbance.

#### Response:

Please see Data Adequacy Supplement Attachment D, Part 1: Wetlands Delineation Maps.

### Biological Resources: Appendix B (g)(13)(D)

#### Information Required:

Please provide copies of the California Natural Diversity Database records completed by the applicant's biologist(s).

#### Response:

Please see Data Adequacy Supplement Attachment D, Part 2, California Natural Diversity Database.

## Land Use

### Land Use: Appendix B (g)(3)(C)

#### **Information Required:**

The AFC Land Use Section (5.7) provides no discussion of parcel legality for the proposed project. The AFC Executive Summary (Section 1.0) states (on pg. 1.0-3), “[s]ite control of the following parcels was established to develop the site: APN 0490-121-42; APN 0490-131-06; APN 0490-131-07; APN 0490-131-08; APN 0490-131-11; APN 0490-131-12; APN 0490-131-15; APN 0490-131-16; APN 0490-161-08; APN 0490-161-09; APN 0490-161-10; APN 0490-161-11; APN 0490-161-12; APN 0490-161-13.” However, there is no discussion of the method and timetable for merging or otherwise combining these parcels so that the proposed project will be located on a single legal parcel.

#### **Response:**

Currently the Project site contains 14 separate and contiguous parcels as referenced above and wholly located within San Bernardino County. The property would be developed as a Solar Electrical Generating Plant which is exempt from the Map Act process (parcel map) under Section 66412(l) of the California Subdivision Map Act. Since all parcels are contiguous and will be under one ownership, the Applicant would file, and San Bernardino County would process a Lot Merger application per Section 66449.20.3/4 of the Map Act, as referenced in the San Bernardino County Code of Ordinances Chapter 87.04 Additional Subdivision Procedures.

The timing to complete the parcel merger can range from four to six weeks but every application is handled separately and the time frame may vary.

## Project Overview

### Project Overview: Appendix B (a)(3)(C)

#### **Information Required:**

Please provide the legal relationship between the power plant owners and the electrical transmission system owners.

#### **Response:**

Abengoa Solar Inc, the owner of Mojave Solar LLC, the power plant owner (PPO), are distinct and separate companies from Southern California Edison, the Transmission System Owner (TSO). There are no shared interests between the Project Owner and the Transmission Owner or common board members.

The legal relationship between the PPO and TSO exist through the Large Generator Interconnection Procedures process. The PPO has entered into interconnection studies to establish interconnection for transmission of the Project's energy to the statewide transmission grid. A Large Generator Interconnection Agreement is expected to be entered into by the end of 2009.

## Public Health

### Public Health: Appendix B (g)(9)(D)

#### Information Required:

Please provide a figure showing all sensitive receptors within a 3-mile radius, including the type of receptor and its number as identified in Table C.4-4.

#### Response:

No sensitive receptors were identified within a 6 mile radius of the Project location. AFC Appendix C.4, Figure C.4-2 presents a 6 mile radius around the Project site identifying no sensitive receptors. Additionally, AFC Appendix C.4, Table C.4-4 presents a list of receptors which includes a number of "residential-farm" sites, i.e., receptors 14 through 22. Although these receptors are included on the receptor listing, it should be noted that "residential" receptors are not technically "sensitive receptors" per the OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines (August 2003), Section 4.6.4 and 4.7.1. AFC Appendix C.4, Table C.4-4 has been revised to clearly indicate that the "residential-farm" receptors are not sensitive receptors (see attached revised table below).

Since no qualifying "sensitive receptors" are within a 6-mile radius to map, Figure C.4-2 in AFC Appendix C.4 shows no locations.

**Table C.4-4 Identified Sensitive Receptors and Distances from Site**

Receptor ID	Google Earth Data				Dist. From Site, m.	Dist. From Site, ft.	Receptor #	UTM Em	UTM Nm	Elev., ft.	UTM Em	UTM Nm	Elev., ft.
	UTM Em	UTM Nm	Elev., ft.	Site, m.									
<b>Site</b>	<b>470569</b>	<b>3874265</b>	2062	na	na	na	1	470696	3874280	2013	470696	3874280	2013
Kramer Junction	450560	3872148	2522	20120.7	66016.0	na	1	450687	3872163	2473	450687	3872163	2473
worker (non-sensitive)	468349	3876627	2068	3241.5	10635.4	na	2	468476	3876642	2019	468476	3876642	2019
worker (non-sensitive)	450580	3872334	2491	20082.1	65889.2	na	3	450707	3872349	2442	450707	3872349	2442
res (non-sensitive)	450971	3872223	2478	19704.1	64649.1	na	4	451098	3872238	2429	451098	3872238	2429
worker (non-sensitive)	449883	3874649	2471	20689.6	67882.5	na	5	450010	3874664	2422	450010	3874664	2422
res (non-sensitive)	447224	3881891	2848	24559.0	80578.1	na	6	447351	3881906	2799	447351	3881906	2799
res (non-sensitive)	442195	3873904	2469	28376.3	93102.6	na	7	442322	3873919	2420	442322	3873919	2420
sch	436634	3873603	2411	33941.5	111361.9	na	8	436761	3873618	2362	436761	3873618	2362
pre-sch	436622	3873505	2413	33955.5	111408.0	na	9	436749	3873520	2364	436749	3873520	2364
worker (non-sensitive)	436184	3877180	2414	34508.3	113221.9	na	10	436311	3877195	2365	436311	3877195	2365
res (non-sensitive)	481797	3865786	2165	14069.9	46163.3	na	11	481924	3865801	2116	481924	3865801	2116
sch-Barstow	490882	3861107	2188	24202.3	79407.7	na	12	491009	3861122	2139	491009	3861122	2139
hosp-Barstow	498280	3861300	2255	30594.0	100378.8	na	13	498407	3861315	2206	498407	3861315	2206
<b>Other Residential (non-Sensitive Receptors) included in the modeling analysis.</b>													
unk (res-farm)	470768	3874297	2062	201.6	661.3	na	14	470895	3874312	2013	470895	3874312	2013
unk (res-farm)	469724	3874694	2067	947.7	3109.3	na	15	469851	3874709	2018	469851	3874709	2018
unk (res-farm)	468687	3875860	2070	2467.0	8094.1	na	16	468814	3875875	2021	468814	3875875	2021
unk (res-farm)	470358	3873999	2072	339.5	1114.0	na	17	470485	3874014	2023	470485	3874014	2023
unk (res-farm)	469629	3874082	2079	957.6	3142.0	na	18	469756	3874097	2030	469756	3874097	2030
unk (res-farm)	469823	3873849	2077	854.1	2802.5	na	19	469950	3873864	2028	469950	3873864	2028
unk (res-farm)	469753	3872435	2129	2003.7	6574.1	na	20	469880	3872450	2080	469880	3872450	2080
unk (res-farm)	469693	3872161	2140	2279.1	7477.7	na	21	469820	3872176	2091	469820	3872176	2091
unk (res-farm)	471622	3874305	2047	1053.8	3457.4	na	22	471749	3874320	1998	471749	3874320	1998

## Soils

### Soils: Appendix B (g)(15)(B)(i)

#### Information Required:

The AFC did not quantify and provide supporting information and calculations for all potential soil loss scenarios.

1. Please quantify the annual soil loss due to wind erosion under a no-project scenario, during construction of the proposed project, and during operation of the proposed project.
2. Please quantify the annual soil loss due to water erosion during operation of the proposed project.
3. For all soil loss estimates (annual loss of soil due to wind and water erosion under a no-project scenario, during construction, and during operation), please provide supporting information and calculations.

The volume of soil loss due to accelerated wind and water erosion must be numerically quantified using the Revised Universal Soil Loss Equation (RUSLE2 model) and the Wind Erosion Prediction System (WEPS model) or similarly accepted methods.

#### Response:

The assessment of the Project's effects to soil resources is based upon the Soil Survey of San Bernardino County, California, Mojave River Area (USDA 1986), as well as the United States Department of Agriculture, Web Soil Survey (2009). The assessment also considers the Project-implemented mitigation measures. The Project area soil conditions include slightly sloping topography and primarily fallow agricultural conditions. The use of erosion control best management practices (BMPs) to control water and wind erosion during construction activities, and placement of impervious surfaces and/or BMPs on disturbed areas within the Project area will effectively control soil loss after construction. Quantitative calculations of potential soil loss using the Universal Soil Loss Equation and the Wind Erosion prediction system were performed and the results are presented below. The Project's potential effects on soil resources can be categorized into those involving construction activities and those related to Project operation.

The average annual soil erosion rates caused by rainfall runoff for the soil associated with the Project are provided in the table below, Soil Erosion Rates. Based upon the calculations, the existing condition erosion rates would increase slightly during construction without the use of erosion and sediment control best management practices (BMPs). The Project will implement construction and operation phase erosion and sediment control BMPs, and final stabilization to reduce soil erosion rates to at or below existing levels. The RUSLE2 soil loss calculations are included in Data Adequacy Supplement Attachment C: Erosion Calculation Record.

The Wind Erosion Prediction System (WEPS) model was used to estimate soil loss due to wind erosion. Wind erosion rates are an order of magnitude higher than soil erosion by rainfall runoff at this location due to the relatively low annual rainfall amount. The

estimated wind erosion rates for the existing condition and construction condition were greater than 100 tons per acre per year (Ton/Ac/Yr), indicating that the WEPS parameters do not as reliable to model the management conditions. The wind erosion rate for the operation condition was 1 Ton/Ac/Yr. Wind erosion control BMPs will be used to maintain or reduce existing wind erosion rates during construction and operation. The Wind Erosion Prediction System soil loss calculations are also included in Data Adequacy Supplement Attachment C: Erosion Calculation Record.

#### Soil Erosion Rates

Erosion Type	Existing (Ton/Ac/Yr)	Construction with BMPs (Tons/Ac/Yr)	Operations with BMPs (Tons/Ac/Yr)
Water (RUSLE2)	0.58	0.61	0.066
Wind (WEPS)	>100*	>100*	1.0

\* Estimated erosion rates greater than 100 Ton/Ac/Yr indicate that WEPS may not accurately model conditions and may not be applicable.

# Transmission System Design

## Transmission System Design: Appendix B (h)(2)(B)

### Information Required:

Provide a physical layout drawing showing distinctly the routes of the proposed 230 kV overhead generator tie lines in and out of the plant site between the proposed Mojave Solar Project (MSP) Alpha and Beta Generator 230 kV switchyards and proposed new SCE Hinkley 230 kV substation including Right of Way (ROW) widths. Describe whether the ROW would be through private and/or public lands.

### Response:

The Project does not have an offsite component to interconnect the generators to the Hinkley 230 kV substation (gen-tie lines). The gen-tie lines are within the site boundary and are shown on Figure 2-3a. Routes are distinct in the detail drawings included in the AFC to amplify Figure 2-3a which was indicated as reviewed. A discussion of these routes follows.

Figure 2-3(c) is a detail view showing the Alpha gen-tie line leaving the Alpha switchyard south to a point just north of an onsite drainage channel then continuing east. Once the Alpha gen-tie line is due north of the Hinkley substation and aligned with a north-south running, onsite drainage channel it turns and follows south to terminate at the Hinkley substation. This detail is included on Figure 2-3(d). Typical clearances and spacing for the Alpha gen-tie lines are included in Section A-A on Figure 2-3(g), Section D-D on Figure 2-3(h) and Section K-K on Figure 2-3(j). The gen-tie line runs in parallel with the plant maintenance roads to provide maintenance and repair access.

Figure 2-3(d) is a detail view showing the Beta gen-tie line leaving the Beta switchyard south to a point just north of an onsite drainage channel then continuing west to terminate at the Hinkley substation. Typical clearances and spacing for the Beta gen-tie lines are included in Section J-J on Figure 2-3(j). The gen-tie line runs in parallel with the plant maintenance roads to provide maintenance and repair access.

No easement or ROW will be provided for the gen-tie lines since the Project will own and operate the gen-tie lines which are located on the Project site.

As shown in Section I-I on Figure 2-3(i) and Figure J-J on Figure 2-3(j) the Project is immediately adjacent to the transmission corridor where interconnection will be made by looping in the #1 Kramer-Cool Water 230 kV transmission line to the Hinkley substation. This loop-in interconnection of the Hinkley substation occurs on the Project site and within the transmission corridor, as such, no other properties will be crossed.

The Alpha gen-tie line crosses Lockhart Ranch Road, a dedicated road easement within the Project site, at a 90 degree angle. An encroachment easement will be required for this road crossing. The loop-in lines will cross a to-be-dedicated by the Project road ROW and will also require an encroachment easement.

All the figures mentioned in the response for Appendix B (h)(2)(B) above are located in the AFC Section 2.0 – Project Description.

### **Transmission System Design: Appendix B (b)(2)(C)**

#### **Information Required:**

Submit a Pole design diagram for dead-end structures of the generator overhead 230 kV tie lines showing configuration of insulators and conductors (with sizes, type and ampere rating) with their respective position measurements on the pole. Provide lengths of the generator 230 kV tie lines and their conductor sizes & types.

Resubmit Figures 2-7(d) and 2-7(e) with sizes and/or ratings of the short overhead conductors and/or cables between the Generator step-up transformer and the 230 kV switchyard.

#### **Response:**

The requested information is included in the Data Adequacy Supplement Attachment E, Part 1 as Figure 2-DA-1, including sizes, type and ampere rating. The gen-tie length for the Alpha and Beta interconnections is 11,460 feet and 4,430 feet, respectively.

The resubmitted figures are included as Figures 2-7(d)-DA and 2-7(e)-DA in the Data Adequacy Supplement Attachment E, Part 1.

Additionally, supporting reference for the above referenced figures is included in the Data Adequacy Supplement Attachment E, Part 2.

### **Transmission System Design: Appendix B (b)(2)(D)**

#### **Information Required:**

Submit a drawing showing the alternate routes of the proposed 230 kV Alpha and Beta generator tie lines and describe how the preferred routes are selected by comparing with alternate routes and their environmental effects.

#### **Response:**

The Project chose to locate the gen-tie lines within the site boundary to avoid any offsite impacts. As such the only logical route was those shown on Figures 2-3a in the AFC Section 2.0 - Project Description and the associated details. These routes were the least impactful environmentally since they are located on the Project site and least costly since they are the shortest distance from the generator to the interconnection point at the Hinkley substation.

### **Transmission System Design: Appendix B (i)(1)(A)**

#### **Information Required:**

Provide a list of federal, state, regional or local laws, ordinances, regulations and standards applicable for transmission and describe in short their applicability/purpose during planning, construction and operation of the proposed MSP.

**Response:**

Laws, ordinances, regulations and standards (LORS) applicable for transmission system engineering are included with AFC Section 5.14, Transmission System Safety and Nuisance. Please refer to pages 5.14-1 to 5.14-8 for tables of LORS followed by a description of the LORS and their applicability to the planning, construction and operation of the Project included from pages 5.14-8 to 5.14-15.

**Transmission System Design: Appendix B (i)(1)(B)****Information Required:**

Provide a list of agencies other than the Energy Commission in a Table who will provide necessary permits, leases and approvals to enforce the identified laws, regulations, standards and for land use or other plans for transmission.

**Response:**

The Project's transmission gen-tie lines are located on the Project site. The following table lists the contacts for the Project's transmission gen-tie line permitting.

Agency	Contact	Responsibility
California Independent System Operator	Judy Brown (916) 608-7062 151 Blue Ravine Road Folsom, CA 95630 jbrown@caiso.com	Project Manager for Interconnection Applications
Southern California Edison	John Tucker (626) 302-8623 2244 Walnut Grove Ave Rosemead, CA 91770 john.tucker@sce.com	Contract Manager, Grid Interconnection & Contract Development
County of San Bernardino – Land Development Division	Sammeh Basta (760) 843-4366 825 E. 3rd St. Room 108 San Bernardino, CA 92415 sbasta@dpw.sbcounty.gov	Review of encroachment easement for transmission crossings.

**Transmission System Engineering: Appendix B (i)(2)**

**Information Required:**

Provide the names, phone number, address and email address of the official contact person of each agency.

**Response:**

Please see response to Transmission System Engineering: Appendix B: (i)(1)(B) above.

**Transmission System Engineering: Appendix B (i)(3)**

**Information Required:**

Provide a schedule when transmission related permits/study reports (The California ISO Facilities study) would be obtained.

**Response:**

The Interconnection Facilities Study (IFS) Agreement was executed on October 15, 2008. The current estimated date of completion is October 17, 2009. It is expected that the Project will enter into a Large Generator Interconnection Agreement prior to the end of 2009 provided the IFS is completed and negotiations are timely.

## Visual Resources

### Visual Resources: (g)(6)(A)(i)

#### Information Required:

Please provide labeled KOP figures 5.15-1 and 5.15-2.

Figures 5.15-1 and –2 depict KOP locations, but do not identify the KOPs by name or number, making interpretation of the text difficult.

#### Response:

As submitted, AFC Figures 5.15-1 and 5.15-2 were incorrectly listed in Section 5.15, Visual Resources, Table of Contents, but correctly labeled on the actual figures and correctly referenced to in the document. In the table of contents, Figure 5.15-1 should be Figure 5.15-1(a), and Figure 5.15-2 should be Figure 5.15-1(b).

The figures with labeled KOPs were omitted due to an error during assembly and printing. Included as “Attachment F” are the Key Observation Points Maps (with labeled KOPs). These maps are listed below:

Figure 5.15-2a, Key Observation Points Map

Figure 5.15-2b, Key Observation Points Map

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## Water Resources

### Water Resources: Appendix B (g)(14)(A)(i)

#### Information Required:

Please provide an Industrial Storm Water Pollution Prevention Plan (SWPPP) in compliance with the Lahontan Regional Water Quality Control Board requirements.

The Hydrology Study included in the AFC evaluated how storm water from a 100-year storm event would impact the proposed project site, but did not provide Best Management Practices (BMPs) for the management and mitigation of that storm water.

#### Response:

SWPPP was included for construction as a part of AFC Appendix K.2. However, the Industrial SWPPP for operations is included and attached as part of this submittal (Data Adequacy Supplement Attachment A).

### Water Resources: Appendix B (g)(14)(A)(ii)

#### Information Required:

Please provide all information needed to complete a draft Report of Waste Discharge (ROWD) for the proposed evaporation ponds (surface impoundments) and bioremediation/HTF land treatment units. The draft ROWD should also be submitted to the Lahontan Regional Water Quality Control Board for review and comment. The draft ROWD should include a complete characterization of the discharge, including but not limited to design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any Best Management Practices used, and a description of disposal methods.

#### Response:

An initial meeting with the Lahontan Regional Water Quality Control Board was held on June 4, 2009 between the Project staff and engineers and Lahontan Staff Patrice Copeland, PG, Senior Engineering Geologist and Joseph Koutsky, PE, Water Resources Control Engineer. The characterization of the Project's discharge, surface impound design, flows and constituents concentrations were discussed regarding the Project's approach to the acceptable design parameters for the Waste Discharge Requirements for permitting purposes and the filing of a Report of Waste Discharge (ROWD). The Project's understanding after this initial meeting was that once the AFC was submitted to the CEC for review and approval, the Project would then work with the Regional Water Quality Control Board to obtain approval of the ROWD as final plans and specifications are developed.

A follow up conference call was also held on July 4, 2009 with Richard Booth of the Lahontan Regional Water Quality Control Board who assumed the assignment of review of

the Project. The Project’s initial approach and understanding was confirmed and further details were discussed.

The ROWD is attached as Data Adequacy Supplement Attachment B to this submittal consistent with our understandings from previous conferences with the SWRCB. The Project will continue to work with the Lahontan Regional Water Quality Control Board as required to gain their concurrence with the Project.

**Water Resources: Appendix B (g)(14)(C)(iii)**

**Information Required:**

The AFC did not provide all of the required water use and wastewater discharge volume estimates.

1. Please provide a table showing the daily (average and maximum) and annual (average and maximum) water requirement and wastewater discharge volume for construction and plant operation. Include:

- Construction potable water.
- Piping hydrostatic test water.
- Dust suppression water.
- all other construction water (specify use).
- Operations potable water.
- Operations process water.
- Construction and operations wastewater discharge (process and sanitary wastewater).

2. Also specify the source of the water (e.g., source of the potable water).

**Response:**

As discussed in AFC Section 5.17.2.1, the water usage for the construction period is expected to proceed along the following schedule:

- Month 1 through 6 – 1,766,050 gallons per day (gpd)
- Month 7 through 26 – 59,800 to 61,750 gpd.

Details of the construction water use are included in the following table and presented in gallons. The Daily Average represents the average for the identified usage over the entire construction period. The Daily Maximum represents the peak usage for the identified use during the construction period. The Annual Average represents the total water usage during construction distributed evenly over the construction period. The Annual Maximum represents the maximum 12-month usage for the identified use.

(units = gallons)	Daily Average	Daily Maximum	Annual Average	Annual Maximum
<b>Mass Grading</b>	396,000	1,716,000	104,544,000	226,512,000

<b>Sub-Grade Stabilization/Finish Grading</b>	7,500	9,750	1,980,000	2,574,000
<b>General Dust Suppression</b>	19,500	19,500	5,148,000	5,148,000
<b>Potable Water</b>	6,500	26,000	1,716,000	1,716,000
<b>Sanitary Purposes</b>	19,500	19,500	5,148,000	5,148,000
<b>Hydrostatic Testing</b>	600	1,950	158,400	343,200
<b>Fire Protection</b>	1,300	1,300	343,200	343,200
<b>General Use</b>	3,325	3,900	877,000	900,900

The source of water during construction will be existing onsite wells until final production wells are installed. Potable water will be delivered by truck until such time that the potable water treatment system is installed and qualified for use in accordance with applicable laws.

During construction sanitary waste will be removed by truck and disposed of in accordance with applicable laws. During construction process water (hydrostatic testing water and general use water) would be reused to the maximum extent possible then removed by truck and disposed of in accordance with applicable laws or discharged to the onsite evaporation ponds once qualified for use in accordance with applicable laws. Volumes are not expected to exceed usage.

As shown in AFC Table 2-2, detailed in AFC Table 5.17-9, and detailed in AFC Figure 2-8, the operations water usage has been reformatted as requested and is shown in the following table. Please note that the Annual Average and Annual Maximum water usages are expected to be similar since the Project is expected to perform similarly year-after-year. The data is presented in acre-feet (AF) and in gallons (gal) and is displayed for the entire Project (both plants combined). Also included in the following table are waste discharges. Sanitary waste is not expected to exceed usage and is estimated as such. Process waste was estimated in AFC Figure 2-8 and presented below.

	<b>Daily Average</b>	<b>Daily Maximum</b>	<b>Annual Average</b>	<b>Annual Maximum</b>
<b>Plant Operations (Process Water)</b>	1,920,960 gal	3,147,840 gal	2,154 AF	2,154 AF
<b>Potable Water</b>	8,928 gal	8,928 gal	10 AF	10 AF
<b>Process Waste</b>	69,120 gal	94,040 gal	78 AF	78 AF
<b>Sanitary Waste</b>	8,928 gal	8,928 gal	10 AF	10 AF

## Water Resources: Appendix B (g)(14)(C)(vi)

### Information Required:

Please provide a copy of all groundwater ownership rights (grant deeds and all deed restrictions), transfer agreements, and purchase option contracts for the 10,478 AFY of groundwater the AFC states the applicant has rights to. Information in these records of ownership rights and purchase option contracts must include documentation sufficiently describing the following:

1. Any restrictions to the access or use of the groundwater associated with the ownership right or purchase option contract;
2. Identification of groundwater well(s) and property parcel(s) associated with the ownership right or purchase option contract; and
3. The quantity of groundwater associated with the ownership right or purchase option contract.

### Response:

As stated in the Water Resources section of the AFC, the Project has rights to 10,478 AFY of groundwater in the Centro Subarea of the Mojave Basin (AFC, p. 5.17-15). These water rights consist of 9,380 AFY, transferred from Harper Lake LLC, 224 AFY transferred in December 2008 from Jennie Most, trustee of the Most Family Trust, and an option to purchase 874 AFY from the Desert View Dairy. The documentation describing these groundwater rights is attached to this submittal in Data Adequacy Supplement Attachment G: Water Rights Documents, as listed below and also including relevant pages from AFC Appendix L to the Annual Report for the 2007-2008 Water Year reporting the groundwater wells and verified Base Annual Production Rights owned by Abengoa Solar Inc. (See Attachment G, Part 1: Annual Report). Additionally, the water rights are documented as follows:

1. For the 9,380 AFY owned by Abengoa Solar Inc., transferred from Harper Lake LLC to Solucar Inc<sup>1</sup> (See Attachment G, Part 2: 9,380 AFY Water Rights):
  - Grant deed;
  - Purchase and Sale Agreement and Joint Escrow Instructions between Harper Lake LLC and Solucar Inc (submitted under confidential cover);
  - Permanent Transfer of Base Annual Production Right filed with the Watermaster;
  - Stipulation for Intervention After Entry of Judgment filed with the Watermaster.
2. For the 224 AFY<sup>2</sup> owned by Abengoa Solar, Inc., transferred from Jennie Most (See Attachment G, Part 3: 224 AFY Water Rights):
  - Grant deed;

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<sup>1</sup> Any references in the attached documentation to Solucar Inc. is in reference to the original corporate name of Abenoga Solar Inc. The name was officially changed to Abengoa Solar Inc. on September 28, 2007.

<sup>2</sup> Only 224 of 280 AFY of Jennie Most's rights were acquired by purchase.

- Purchase and Sale Agreement and Joint Escrow Instructions between Jennie Most and Harper Dry Lake Land Company<sup>3</sup> (submitted under confidential cover);
  - Permanent Transfer of Base Annual Production Right filed with the Watermaster;
  - Stipulation for Intervention After Entry of Judgment filed with the Watermaster.
3. For the option to purchase 874 AFY from the Desert View Dairy (See Attachment G, Part 4: 874 AFY Water Rights):
- Option Agreement between Desert View Dairy and Harper Lake LLC (submitted under confidential cover);
  - Memorandum of Option Agreement between Desert View Dairy and Harper Lake LLC recorded in the Official Records of San Bernardino County;
  - Assignment of Option to Solucar Inc. recorded in the Official Records of San Bernardino County;
  - Option extension dated August 14, 2009.

The documents attached to this submittal describe the quantity of groundwater associated with the groundwater ownership rights equal to the quantities listed above. In addition, the documents identify the wells and parcel numbers associated with the purchase and option agreements.

There are no restrictions to the access of the groundwater. The groundwater supply will be produced by onsite groundwater wells until final production wells are installed. Potential restrictions on the use of the groundwater result from the administration of the Judgment entered in the comprehensive adjudication of water rights in the Mojave Basin Area.<sup>4</sup> The court appointed a Watermaster, a division of the Mojave Water Agency, to administer the terms of the Judgment. Copies of the Judgment and the Rules and Regulations of the Mojave Basin Area Watermaster may be downloaded from the Mojave Water Agency website at <http://www.mojavewater.org/home/watermaster/documents/Judgment.pdf>. Below is a summary of the Judgment's terms and the Watermaster regulations that may restrict the Project's groundwater use.

The Judgment determined that the Mojave Basin Area consists of five Subareas and established Subarea obligations, or an average annual amount of water that a Subarea is obligated to provide to an adjoining downstream Subarea. Each Subarea was allocated a Free Production Allowance, or the amount that may be produced free of any makeup water obligation. The Subarea's Free Production Allowance was then allocated among the groundwater producers in the Subarea. Each producer's share is their Base Annual Production Right. A producer may pump and use groundwater up to the amount of their Base Annual Production Right free of any replacement water obligation. All water

<sup>3</sup> Abengoa Solar Inc is the sole member of Harper Dry Lake Land Company.

<sup>4</sup> *City of Barstow et al. v. City of Adelanto et al*, Riverside County Superior Court Case No. 208568 (Jan. 10, 1996)("Judgment").

produced in excess of this amount must be replaced by the producer, either by repayment to the Watermaster of funds sufficient to purchase replacement water or by transfer of unused production from another producer. Any amount that is not produced will be carried over and accumulated for one year, called a Carryover Right.

Under the Judgment, any Base Annual Production Right or any portion thereof may generally be sold, transferred, licensed or leased.<sup>5</sup> No transfer becomes operable until the parties to the transfer notify the Watermaster of the terms and conditions of the transfer, the price to be paid by the transferee, the name of the responsible party and the name of the person who will pay any applicable assessments.<sup>6</sup> The transferee must be or become a party to the Judgment.<sup>7</sup> The attached documentation shows that Abengoa Solar Inc. complied with these requirements. The Watermaster keeps record of and reports any transfer of Base Annual Production Rights in its Annual Report.<sup>8</sup> The attached documentation includes Appendix L to the 2007-2008 Annual Report that lists Abengoa Solar Inc.'s verified Base Annual Production Right.<sup>9</sup>

Each producer must have an accurate method for quantifying production, report the total production, purpose of use, and place of use quarterly to the Watermaster, and provide copies of all records used to quantify water production.<sup>10</sup> Any change in purpose of use must be reported in advance to the Watermaster.<sup>11</sup> The Project will comply with these reporting requirements. If the Watermaster determines that a new purpose of use for any year has resulted in a higher rate of consumption than the rate applicable to the original purpose of use, the Watermaster shall use a multiplier to adjust upward such production for the purpose of determining the producer's replacement water assessment and to adjust upward the Free Production Allowance portion of such production for the purpose of determining the producer's makeup water assessment.<sup>12</sup> The multiplier is determined by dividing the number of acre-feet of consumption under the new purpose of use by the number of acre-feet of consumption that would have occurred under the original purpose of use. The Judgment specifies a 50% consumptive use rate for irrigation and case-by-case rates for industrial uses.<sup>13</sup> The Project anticipates an approximate 2:1 set aside to accommodate the transfer from irrigation to industrial use.

The Watermaster may recommend in the Annual Report an adjustment, if needed, to the Free Production Allowance for any Subarea.<sup>14</sup> The Project's proposed groundwater use would be affected by any future adjustments, if any, to the Free Production Allowance for the Centro Subarea.

Any potential future transfer of the Project's groundwater rights would be restricted by their location in the Harper Lake Basin of the Centro Subarea. The Judgment provides that

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<sup>5</sup> Judgment at ¶ 34.

<sup>6</sup> Exhibit F to the Judgment at ¶ 3.

<sup>7</sup> Rules and Regulations of the Mojave Basin Area Watermaster (Adopted June 30, 1994, Revised October 29, 2008) ("Watermaster Regulations"), at ¶ 12(A).

<sup>8</sup> Judgment at ¶ 24(k), (n).

<sup>9</sup> The 224 AFY transferred from Jennie Most is not included in this Appendix L because it was not executed until December 2008, after the 2007-2008 Water Year reported on in the most recent Annual Report.

<sup>10</sup> Judgment at ¶ 24(p); Watermaster Regulations at ¶¶ 11, 17.

<sup>11</sup> Watermaster Regulations at ¶ 25.

<sup>12</sup> Judgment at ¶ 24(q); Watermaster Regulations at ¶ 25.

<sup>13</sup> Exhibit F to the Judgment at ¶ 2.

<sup>14</sup> Judgment at ¶ 24(o); Watermaster Regulations at ¶ 15.

no producer in the Harper Lake Basin may transfer any Base Annual Production Right to producers outside the Harper Lake Basin except by physically conveying the water.<sup>15</sup>

### **Water Resources: Appendix B (g)(14)(E)(i)**

#### **Information Required:**

Please provide a description of all potential changes in the physical or chemical condition of existing water supplies that would develop as a result of the plant's water use.

#### **Response:**

No identifiable changes to the physical or chemical condition of existing water supplies are expected as a result of the plant's water use. This is discussed in sections 5.17.2 and 5.17.3 of the AFC. Specifically, "LGS anticipates no significant changes to groundwater quality beneath the site as a result of hydraulic interference caused by groundwater pumping during the operation period. Because of the high transmissivity of the uQal aquifer, prolonged extraction for MSP facility supply water should not cause an increase in TDS concentration or deterioration in quality by drawing in water of higher salinity from an expanded pumping depression reaching below Harper Lake. Similarly, the proposed pumping of groundwater to supply the MSP facility during construction is not expected to induce additional migration of Mojave River underflow. About 6,500 to 18,000 AFY of groundwater have been used for historical agriculture production in the vicinity of the existing FP&L solar energy facility and the proposed MSP facility, as compared to the 2,163 AFY needed during operation of the MSP facility." (from AFC sections 5.17.2.7, 5.17.2.12, and 5.17.3.1).

This concept is revisited and expanded several times in the AFC. Similarly, "because of the high transmissivity of the uQal aquifer, prolonged production of supply water for the MSP facility is not expected to increase TDS concentration. Drawing in groundwater of higher salinity from an expanded pumping depression reaching below Harper Dry Lake is not anticipated. Similarly, the proposed pumping ... is not expected to induce additional migration of Mojave River underflow." (from AFC section 5.17.2.9, 5.17.3.1, and 5.17.3.2). AFC section 5.17.2.12 continues, "groundwater quality stability was observed over a seven-day pumping period at the Ryken Well. LGS does not expect groundwater production during facility construction and operation to significantly impact groundwater quality."

Section 5.17.3.1 states, "Maximum estimated hydraulic interference at positions off the facility footprint and at a radial distance of 0.5 miles from production wells... is 1.4 feet. This interference to potential offsite wells located as close as 0.5 miles from the MSP supply wells is insignificant. LGS does not expect groundwater production during facility construction to significantly impact water levels at neighboring wells. Based on interpretations of 2D modeling simulations, the uQal aquifer shows minimal sensitivity (with regard to hydraulic head) to relatively small changes in the discharge rate (+/- 20 AFY).", as well as "No significant changes to groundwater quality beneath the site are foreseen as a result of limited hydraulic interference caused by groundwater pumping during the construction period.... Additionally, LGS does not expect groundwater

<sup>15</sup> Exhibit F to the Judgment at ¶ 8.

production during facility construction to significantly impact water levels at neighboring wells.”

Cumulative impacts are not expected to be significant (section 5.17.3.3). The cumulative effects of both the FP&L and MSP facilities were considered in the modeling prepared for the AFC.

### **Water Resources: Appendix B (g)(14)(E)(ii)**

#### **Information Required:**

Please provide a description of all potential changes in the physical or chemical condition of any contaminants in the groundwater that would develop as a result of the plant’s groundwater use.

This evaluation may require a subsurface investigation in areas of potential contamination as recommended by the Phase 1 environmental site assessment.

#### **Response:**

Section 5.17.2.11 addresses the potential MSP impact on the Hinkley-area groundwater plume of hexavalent chromium. Specifically, “LGS interpreted aquifer pumping-test data collected from the MSP facility area near Harper Lake. The distance from the proposed MSP ... production wells to the northern, leading edge of the ... plume... is about 10 miles. This distance is too large for future water production by the proposed MSP facility to influence contaminated groundwater in the Hinkley Valley.

Other impacts, e.g., from releases of chemicals used during construction, will be mitigated as described in the SWPPP and DESCP to “ensure that construction-related water-quality impacts are not significant.” (AFC sections 5.17.3.1 and 5.17.3.2)

The Phase I environmental assessment did not recommend a subsurface investigation; in fact, no evidence of groundwater contamination or potential contamination was identified by the assessment. No realistic threat to groundwater has been identified and contamination reaching the water table (about 150 feet deep) from surface soils at this location is likely an unrealistic scenario.

As demonstrated in the AFC, test results for benzene, ethylbenzene, toluene, xylenes, and MTBE at the Ryken Well (AFC Appendix A, Tables 4-4 and 4-5 of BCM Appendix C) were reported by the lab as below the reporting limit. The Ryken well produces a large amount of water, about 874 AF/Y, and is on the Project site. We have heard no reports indicating contamination in the SEGS wells, which are also only a short distance away from the proposed MSP site. In the unlikely event of contamination of groundwater at the site from any source, the contamination will be detected by the monitoring program which Abengoa will have in place as a condition of certification. If required by the CEC, additional investigation during discovery could further prove that no issue exists.