

ENSR

1220 Avenida Acaso, Camarillo, California 93012-8738
 T 805.388.3775 F 805.388.3577 www.ensr.aeccom.com

August 28, 2007

VIA OVERNIGHT COURIER SERVICE

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 07-AFC-1

1516 Ninth Street, MS-4

Sacramento, California 95814-5512

Re: Victoryville 2 Hybrid Power Project: Docket No. 07-AFC-1

DOCKET	
07-AFC-1	
DATE	AUG 28 2007
RECD.	AUG 29 2007

Dear Sir/Madam:

Pursuant to California Energy Commission Siting Regulation §1209(c), §1209.5, and § 1210, enclosed herewith for filing please find an original and twelve (12) copies of Applicant's Responses to California Unions for Reliable Energy Data Requests, Set Two, along with two CD ROM copies that include additional attachments.

Please note that the enclosed submittal was also distributed to all parties on the CEC's current proof of service list.

Sincerely yours,



Sara J. Head
 Vice President

Enclosures: Responses to CURE Data Requests, Set Two, # 1 – 153

CD ROM with above Responses, plus:

- DR2 Revised Construction Spreadsheets
- DR24 HHI Instruction Handbook
- DR35 Revised TAC Emission Spreadsheet and Updated HRA
- DR141-1 SCLA Plan Amendment (Dodson, 2003)
- DR141-2 VVWRA Updated Biological Survey Report (Smith & Dodson, 2005)

cc: CEC 07-AFC-1 Proof of Service List (w/encl., via overnight courier service)
 Michael J. Carroll, Esq. (w/encl.)

**STATE OF CALIFORNIA
ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

In the Matter of:) Docket No. 07-AFC-1
)
Application for Certification,) **ELECTRONIC PROOF OF SERVICE**
for the VICTORVILLE 2) **LIST**
HYBRID POWER PROJECT)
by the City of Victorville) **(revised August 22, 2007)**
)
_____)

Transmission via overnight mail delivery service at Camarillo, California with delivery fees thereon fully prepaid and addressed to the following:

DOCKET UNIT

CALIFORNIA ENERGY COMMISSION

Attn: DOCKET NO. 07-AFC-1
1516 Ninth Street, MS-4
Sacramento, California 95814-5512
docket@energy.state.ca.us

APPLICANT

Jon B. Roberts
City Manager
City of Victorville
14343 Civic Drive
P.O. Box 5001
Victorville, CA 92393-5001
JRoberts@ci.victorville.ca.us

APPLICANT'S CONSULTANTS

Thomas M. Barnett
Inland Energy, Inc.
South Tower, Suite 606
3501 Jamboree Road
Newport Beach, CA 92660
TBarnett@inlandenergy.com

VICTORVILLE II HYBRID POWER PROJECT
CEC Docket No. 07-AFC-1

COUNSEL FOR APPLICANT

Michael J. Carroll, Project Attorney
Latham & Watkins LLP
650 Town Center Drive, Suite 2000
Costa Mesa, CA 92626
Michael.Carroll@lw.com

INTERESTED AGENCIES

Electricity Oversight Board
770 L Street, Suite 1250
Sacramento, CA 95814
esaltmarsh@eob.ca.gov

INTERVENORS

California Unions for Reliable Energy (CURE)
c/o Gloria D. Smith
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080
gsmith@adamsbroadwell.com

ENERGY COMMISSION

James Boyd
Presiding Committee Member
jboyd@energy.state.ca.us

Jackalyne Pfannenstiel
Associate Committee Member
JPfannen@energy.state.ca.us

Raoul Renaud
Hearing Officer
rrenaud@energy.state.ca.us

John Kessler
Project Manager
JKessler@energy.state.ca.us

Caryn Holmes
Staff Counsel
CHolmes@energy.state.ca.us

VICTORVILLE II HYBRID POWER PROJECT
CEC Docket No. 07-AFC-1

Mike Monasmith
Public Adviser
pao@energy.state.ca.us

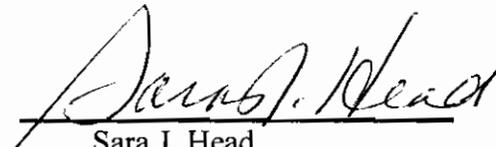
DECLARATION OF SERVICE

I, Sara Head, declare that on August 28, 2007, I deposited the required copies of the attached:

RESPONSES TO CURE DATA REQUESTS, SET 2

with an overnight mail delivery service at Camarillo, California with delivery fees thereon fully prepaid and addressed to the California Energy Commission consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. A copy of the attached was also sent to all those identified on the Proof of Service List above.

I declare under penalty of perjury that the foregoing is true and correct. Executed on August 28, 2007, at Camarillo, California.


Sara J. Head

VICTORVILLE 2 HYBRID POWER PROJECT RESPONSES TO CURE DATA REQUESTS, SET 2

**Submitted on Behalf of:
City of Victorville**

**by:
Inland Energy, Inc.**

**Submitted to:
California Energy Commission**

**Prepared by:
ENSR | AECOM**

August 2007

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

Data Request 1

Please provide support for the volume of soil handled used for calculating fugitive dust emissions during the excavation phase of the combined cycle facility and the solar array.

Response:

Earthwork volumes were calculated by comparing existing ground elevations from an aerial survey (2-ft interval contours) and the proposed grading. The proposed grading was designed in such arrangement as to minimize the slope used on the north-south direction and avoid a slope on the east-west direction. The second goal of the proposed grading was to balance the cut and fill volumes.

For the conceptual design presented, the estimated earthwork cut volume for the proposed facility is 1,450,050 CY and the estimated fill volume is 1,105,100 CY. These volumes consider an eight percent shrinkage factor. Volumes were calculated with a CADD software (Geopak) and verified by spot checks on a grid using both existing and proposed ground elevations. It is expected that the previously mentioned volumes will be balanced in future design stages of the Project.

Data Request 2

Please revise calculations of uncontrolled and controlled fugitive dust PM10 and PM2.5 emissions to reflect emissions from:

- a. soil handling and bulldozing and grading using a conservative moisture content default value appropriate for the Mojave Desert or discuss why a moisture content of 15% is deemed appropriate;
- b. soil handling during construction of the reclaimed water and sewer pipelines, the gas and backup water supply lines, and the transmission line segments 1, 2, and 3, and from bulldozing and grading of the transmission line segment 2;
- c. fugitive dust emissions from storage pile wind erosion during construction of the reclaimed water and sewer pipelines, the gas and backup water supply lines, and the transmission line segments 1, 2, and 3;
- d. wind erosion from graded areas including the Project site, linear facilities, and temporary construction laydown areas; and
- e. mud and dirt trackout.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

Response:

2a. Watering for fugitive particulate matter emission control during soil handling, bulldozing and grading is expected to maintain a soil moisture content of at least 15 percent. Therefore, the calculated PM10 and PM2.5 emissions from these activities using a 15 percent moisture content represent controlled emissions, rather than uncontrolled emissions. The references to control efficiency in the equations and text on page G.3-5 of AFC Appendix G.3 (emissions from soil handling) and on page G.3-7 (emissions from bulldozing and grading) should not have been included in the descriptions of the emission calculations. A control efficiency of 50 percent was inadvertently applied to the calculated emissions from soil handling, but an additional control efficiency was not applied to calculated emissions from bulldozing and grading (see AFC Appendix G Table G.22). Emissions from soil handling have been recalculated without the additional 50 percent control efficiency to represent expected controlled emissions. Revised emission calculation spreadsheets are provided electronically in a password protected format on the enclosed CD.

2b. Construction emission calculations have been revised to include fugitive particulate matter emissions from soil handling during construction of the reclaimed water and sewer pipelines, the gas and backup water supply lines, and transmission line Segments 1, 2, and 3.

The daily volume of soil handled during construction of the water and sewer pipelines and the gas and backup water supply lines was estimated based on excavating 1,000 feet per day of a trench four feet deep and eight feet wide. The resulting daily volume for the water and sewer pipelines would be a total of 1,000 feet x 4 feet x 8 feet / 27 cubic feet per cubic yard = 1,185 cubic yards per day. The total daily volume for the gas and backup water supply lines would also be 1,185 cubic yards per day.

The daily volume of soil handled during transmission line construction was based on excavating soil for two 20 feet x 20 feet x 8 feet deep foundations per day. The resulting volume is 20 feet x 20 feet x 8 feet x 2 / 27 cubic yards per cubic foot = 237 cubic yards per day.

Bulldozing and grading are not expected to be required during construction of transmission line Segment 2. Therefore, the construction emission calculations have not been revised to include fugitive particulate matter emissions from these activities.

Revised emission calculation spreadsheets are provided electronically in a password protected format on the enclosed CD.

2c. Construction emission calculations have been revised to include fugitive particulate matter emissions from storage pile wind erosion during construction of the reclaimed water and sewer

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

pipelines, the gas and backup water supply lines, and transmission line Segments 1, 2, and 3. Daily storage pile surface areas during construction of the pipelines were calculated based on a storage pile 1,000 feet long, eight feet wide and four feet high. The resulting surface area is 0.37 acres per day. Daily storage pile surface areas during construction of the transmission line segments were calculated based on two storage piles 20 feet wide by 20 feet long by eight feet high. The resulting surface area is 0.024 acres per day.

Revised emission calculation spreadsheets are provided electronically in a password protected format on the enclosed CD.

2d. Chemical dust suppressants and/or water will be applied to stabilize graded surfaces during construction. Particulate matter emissions from wind erosion of these stabilized surfaces will be minimal. Therefore, these emissions have not been calculated.

2e. As presented in the response to CURE Data Request 3, mitigation measures will be implemented to prevent trackout of mud and dirt onto paved public roads. Therefore, fugitive PM10 and PM2.5 emissions from trackout will be negligible and have not been calculated.

Revised PM10 and PM2.5 emissions during construction of the combined cycle facility and the solar field are provided in Table DR2-1, and revised emissions during construction of the reclaimed water, sanitary sewer, natural gas, backup water and transmission line segments are provided in Table DR2-2.

Table DR2-1
Revised On-Site Combined-Cycle Facility and Solar Array
PM10 and PM2.5 Construction Emissions

Component	Maximum Daily Emissions (pounds/day)		Maximum Annual Emissions (tons/year)	
	PM10	PM2.5	PM10	PM2.5
Combined-Cycle Facility	55.9	16.6	6.6	2.0
Solar Array	93.1	23.5	7.7	2.2

**VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2**

Technical Area: Air Quality

Response Date: August 29, 2007

**Table DR2-2
Revised Maximum Daily Reclaimed Water, Sanitary Sewer, Natural Gas,
Backup Water and Transmission Line Construction Emissions**

Component	PM10 Emissions (pounds per day)	PM2.5 Emissions (pounds per day)
Reclaimed Water and Sanitary Sewer	13.7	5.1
Natural Gas and Backup Water	9.7	3.6
Transmission Line Segment 1	83.9	23.4
Transmission Line Segment 2	140.3	32.7
Transmission Line Segment 3	309.0	71.8

Data Request 3

Please list all measures constituting “standard construction practices” that would be implemented for the VV2 Project and provide their respective emission reduction efficiency. Please indicate whether the City is willing to include these mitigation measures as a condition of certification (“CoC”).

Response:

The City proposes to implement the following mitigation measures during construction. These mitigation measures include construction fugitive particulate matter mitigation measures included in the Final Decision for the Blythe Energy Project Phase II (02-AFC-1, December 2005), which is the most recent CEC Final Decision for a project that involves extensive site preparation activities, as well as mitigation measures to reduce construction nitrogen oxides (NO_x) emissions and NO₂ impacts proposed in the response to CEC Staff Data Request 2 (submitted on July 23, 2007).

AQ-C1. The project owner shall fund all expenses for an onsite Air Quality Construction Mitigation Manager (AQCMM), who shall be responsible for maintaining compliance with conditions AQ-C2 and AQ-C3. The onsite AQCMM shall have full access to areas of construction of the project site and linear facilities, and shall have the authority to appeal to the CPM to have the CPM stop any and all construction activities as warranted by applicable construction mitigation conditions. The onsite AQCMM shall have a current certification by the California Air Resources Board (ARB) for Visible Emissions

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

Evaluation (EPA Method 9) prior to commencement of ground disturbance. The onsite AQCM shall not be terminated without written consent of the CPM.

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit to the CPM, for approval, the name and contact information for the onsite AQCM.

AQ-C2. The project owner shall provide a construction mitigation plan, for approval, which shows the steps that will be taken, and reporting requirements, to ensure compliance with conditions AQ-C3, AQ-C4 and AQ-C5.

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit to the CPM, for approval, the construction mitigation plan.

AQ-C3. The onsite AQCM shall submit to the CPM, in the Monthly Compliance Report (MCR), a construction mitigation report that demonstrates compliance with the following mitigation measures:

- a) The AQCM shall not allow construction activities at the plant site that include the use of combustion equipment to occur before one hour after sunrise or after 30 minutes before sunset. This requirement can be waived by the CPM upon presentation of a modeling analysis that demonstrates that compliance with the CAAQS can be met due to reduced construction activities/emissions and/or reduced NO₂ background levels in the future.
- b) Scrapers used during site preparation for construction of the solar array shall be model year 2006 or later and comply with California Tier 3 emission standards for off-road engines.
- c) The scrapers used during site preparation for construction of the solar array shall have clearly visible tags issued by the onsite AQCM that shows the engine meets condition AQ-C3(b) above.

Verification: In the MCR, the project owner shall provide the CPM with a copy of the construction mitigation records that show the construction activities conducted and the beginning and end of daily construction activities each day, which clearly show compliance with condition AQ-C3.

AQ-C4. The AQCM shall submit documentation to the CPM in each Monthly Compliance Report (MCR) that demonstrates compliance with the following mitigation measures for the purposes of preventing all fugitive dust plumes from leaving the Project.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

Any deviation from the following mitigation measures shall require prior CPM notification and approval.

- a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered as frequently as necessary to comply with the dust mitigation objectives of AQ-C5 (the prevention of fugitive dust plumes). The frequency of watering can be reduced or eliminated during periods of precipitation.
- b) No vehicle shall exceed 10 miles per hour within the construction site.
- c) The construction site entrances shall be posted with visible speed limit signs.
- d) All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.
- e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
- f) All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.
- g) All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.
- h) Construction areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan (SWPPP) to prevent run-off to roadways.
- i) All paved roads within the construction site shall be swept as necessary on days when construction activity occurs to prevent the accumulation of dirt and debris.
- j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept as necessary on days when construction activity occurs or on any other day when dirt or runoff from the construction site is visible on the public roadways.
- k) All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.
- l) All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

m) Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

Verification: The project owner shall include in the MCR (1) a summary of all actions taken to maintain compliance with this condition, (2) copies of any complaints filed with the air district in relation to project construction, and (3) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-C5: The AQCMM or an AQCMM Delegate shall continuously monitor the construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (1) off the project site or (2) 200 feet beyond the centerline of the construction of linear facilities or (3) within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if step 1 specified above fails to result in adequate mitigation within 30 minutes of the original determination.

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if step 2 specified above fails to eliminate visible dust plumes at any location 200 feet or more off the project site within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified.

**VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2**

Technical Area: Air Quality

Response Date: August 29, 2007

The effectiveness of proposed Mitigation Measure AQ-C3 for reducing ambient NO₂ and PM₁₀ air quality impacts was presented in the responses to CEC Staff Data Requests 1, 3 and 4 submitted on July 23, 2007. Mitigation measures AQ-C4 d), e), f), h) and j) will prevent emissions from trackout. Mitigation Measures AQ-C4 a) and m) will prevent emissions from wind erosion of graded surfaces. The emission reductions that will be achieved by implementation of the other mitigation measures cannot be readily quantified. However, the CEC concluded in the Final Decision for Blythe Energy Project II that implementation of the measures would reduce PM₁₀ impacts from construction to a level of insignificance (Final Decision, p. 18).

Data Request 4

Please clarify whether the temporary construction laydown area would be dust-controlled by graveling, application of a dust control agent, or watering twice per day.

Response:

Temporary construction laydown areas will be surfaced with gravel in order to control dust and provide a better working surface.

Data Request 5

Please quantify emission reductions resulting from implementation of the proposed measures, summarize mitigated construction emissions, and compare the mitigated emissions to appropriate thresholds of significance or conduct ambient air quality modeling to determine whether mitigated construction emissions would result in or contribute to a violation of an ambient air quality standard.

Response:

As indicated in the response to CURE Data Request 4, the effectiveness of proposed Mitigation Measure AQ-C3 for reducing ambient NO₂ and PM₁₀ air quality impacts was presented in the responses to CEC Staff Data Requests 1, 3 and 4 submitted July 23, 2007.

Additionally, Mitigation Measures AQ-C4 d), e), f), h) and j) will mitigate emissions from trackout, and Mitigation Measures AQ-C4 a) and m) will prevent emissions from wind erosion of graded surfaces. Because emissions from trackout and wind erosion will be eliminated, neither uncontrolled emissions from these sources nor the emission reductions resulting from these measures need to be quantified.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

The emission reductions that will be achieved by implementation of the other mitigation measures cannot be readily quantified. However, the PM10 construction air quality modeling that was conducted in response to CEC Staff Data Request 3 has been revised to incorporate the revised emissions from soil handling that were described above in response to CURE Data Request 2. Maximum 24-hour average PM10 impacts, excluding background PM10 concentrations, increased from 28.5 $\mu\text{g}/\text{m}^3$ to 30.4 $\mu\text{g}/\text{m}^3$.

The CEC concluded in the Final Decision for Blythe Energy Project II that implementation of the mitigation measures proposed in the response to CURE Data Request 3 would reduce PM10 impacts from construction to a level of insignificance (Final Decision, p. 18). Therefore, it is not necessary to compare mitigated emissions to thresholds of significance nor to conduct ambient air quality modeling of mitigated emissions to demonstrate that PM10 impacts will be reduced to a level of insignificance.

Data Request 6

Please provide the expected control efficiency for application of a dust control agent.

Response:

A polymer emulsion will be utilized on the solar field for control of fugitive particulate matter emissions. Two products are being analyzed: 1) DirtGlue, which has been used in other solar fields with similar disturbed areas and soil conditions with favorable results, and 2) Soil Sement, which has been used by several State and Federal agencies to control PM10 and PM2.5 fugitive dust emissions. These products control emissions by forming a three dimensional matrix on the soil which acts as a semi-permeable membrane-like structure that can stabilize the soil surface but still allow oxygen and water to penetrate.

These dust suppressants will stabilize the surface of the solar array field, which will eliminate fugitive emissions from wind erosion. Therefore, the control efficiency for wind erosion is essentially 100 percent.

CARB has verified the manufacturer's claim that Soil Sement reduces PM10 emissions from unpaved roads by approximately 84 percent (see <http://www.arb.ca.gov/eqpr/midwest.htm>). The control efficiency for DirtGlue would be expected to be similar to the efficiency for Soil Sement.

**VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2**

Technical Area: Air Quality

Response Date: August 29, 2007

Data Request 7

Please provide an estimate for uncontrolled and controlled fugitive dust emissions for VV2 Project operations, including entrained road dust from vehicle travel on on-site and offsite paved and unpaved roads and wind erosion from the power block area, solar field, and unpaved roads. Please include these emissions in a revised ambient air quality modeling for VV2 Project operations.

Response:

Please refer to Applicant's objection to Data Request 7 docketed on August 17, 2007.

Data Request 8

Please discuss the maintenance plan for areas treated with a dust control agent, including the type and frequency of dust control agent application.

Response:

The polymer emulsion will be applied after final grading of the solar field is completed. Depending on the selected product, an initial life expectancy will be determined for the specific site conditions (i.e., DirtGlue up to eighteen months, Soil-Sement up to five years). Surface conditions will be inspected after the initial application, and the product will be reapplied as needed.

Data Request 9

Because the availability of fugitive dust road paving ERCs at this point is uncertain, please identify any other known, valid sources for ERCs or other mitigation measures for Project operational PM10 emissions.

Response:

Applicant has discussed the issues raised by CURE related to Rule 1406 with the MDAQMD, and the MDAQMD expects to adopt the Rule in the near term. MDAQMD worked closely with EPA on the rule and the District did not receive any comments on the proposed rule from the California Air Resources Board. Therefore, it appears likely that this source of PM10 ERCs will be available and identifying other sources of PM10 ERC is not necessary at this time.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

Data Request 10

Please provide an inventory for all hazardous and non-hazardous materials delivered to or hauled from the VV2 Project site including estimated quantities, schedule of delivery or disposal, and expected roundtrip distances for the delivery and disposal vehicles.

Response:

Anticipated off-site delivery and removal trips are listed in Table 10-1. Locations of specific suppliers of delivered materials and destinations for removed materials have not yet been identified. A conservative estimate for the roundtrip travel distance is 100 miles for each trip.

Table 10-1
Annual Operational Delivery and Removal Trips

Material Delivered or Removed	Trips per Year
Hydrogen	1
Compressed gas cylinders	16
Aqueous Ammonia	34
Boiler water treatment chemicals	16
Sulfuric acid	16
Detergent	4
Therminol VP-1™	6*
Lube oil	1
Diesel fuel	12
Transformer insulating oil	1
Water treatment waste disposal (twice per day)	238
Cooling tower sludge disposal	3
Municipal waste disposal	52
* Estimated annual average over the life of the Project	

Data Request 11

Please provide an inventory of all O&M vehicles including a description of typical tasks performed, average roundtrip distances on- and off-site, and a schedule of operation for each of these vehicles.

**VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2**

Technical Area: Air Quality

Response Date: August 29, 2007

Response:

Anticipated on-site motor vehicle use is summarized in Table DR11-1.

**Table DR11-1
Monthly Operational On-Site Motor Vehicle Use**

Vehicle Type	Number	Average Monthly Distance (miles/month)
Pickup Truck	2	22
Utility Van	1	2
Utility Truck with Welding Bed	1	2
Utility Flatbed Truck	1	2
Stakebed Truck (Warehouse)	1	11
Evacuation Truck (for HTF only)	1	0
Deluge Wash Truck (mirror washing)	1	3
Electric Carts	2	4
Small Tractor	2	20
Large Utility Tractor	1	8

Data Request 12

Please estimate exhaust emissions from vehicle travel for VV2 Project operations, including commuter vehicles, on-site O&M vehicles, and delivery and waste disposal trucks. Please include these emissions in a revised operational ambient air quality modeling.

Response:

Please refer to Applicant's objection to Data Request 12 docketed on August 17, 2007.

Data Request 13

Please provide an estimate for annual operational VOC emissions from fugitive HTF system components and from larger equipment leaks and breaches and include these in the operational emissions inventory.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

Response:

New solar plant designs incorporate sealing technologies that have been developed over the last 20 years that eliminate or minimize losses due to volatilization, spills and leakage. Welded connections are used wherever practical and the elimination of valves is accomplished in solar array field and other HTF system applications where flow control is now achieved with internal orifice plates. Isolation valves are specified with back-seating to eliminate the location of valve packing as sources of emissions. Pump seals are typically now designed with a double seal configuration that entails steam or nitrogen injection and as a result, seal failures allow fluids and vapors to flow back into the enclosed HTF system as opposed to out-leakage.

The goal of responsible plant design and prudent operation and maintenance training procedures and practices is to eliminate or prevent VOC emissions, equipment leaks or breaches. As a result, VOC emissions from fugitive HTF system components and from equipment leaks and breaches will be negligible and have not been estimated.

Data Request 14

Please provide a conservative estimate for secondary PM10 formation from cooling tower ammonia emissions due to drift and ammonia stripping from the circulating water.

Response:

Please refer to Applicant's objection to Data Request 7 docketed on August 14, 2007.

Data Request 15

Please provide a conservative estimate for secondary PM10 formation due to ammonia slip from the SCR system.

Response:

Please refer to Applicant's objection to Data Request 15 docketed on August 17, 2007.

Data Request 16

Please model atmospheric deposition of secondary PM10 to determine nitrogen deposition on the soils of the desert ecosystem in the Project's vicinity.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

Response:

Please refer to Applicant's objection to Data Request 16 docketed on August 17, 2007.

Data Request 17

Please provide a revised top-down LAER/BACT for the Project's cooling demand including an analysis of dry cooling and dry/wet hybrid systems.

Response:

Please refer to Applicant's objection to Data Request 17 docketed on August 17, 2007.

Data Request 18

If the City would use a wet cooling tower, please include a mass emission rate for PM10 as a CoC and indicate how the City would guarantee that cooling tower performance would not exceed the established mass emission rate, e.g., by monitoring dissolved solids in the cooling tower circulating water or periodic inspection of the mechanical integrity of the drift eliminators.

Response:

Based on conditions contained in the Blythe Energy Project Phase II CEC Final Decision (02-AFC-1, December 2005), the City anticipates that the Determination of Compliance issued by the Mojave Desert Air Quality Management District (MDAQMD) will contain conditions related to cooling tower emissions, operational monitoring, and inspection and maintenance. The VV2 Project will be required to comply with those conditions.

Data Request 19

Please provide a copy of the Bibb, September 2006, report "Comparison between Wet Cooling Tower Technology, Air Cooled Condenser Technology, and Hybrid Cooling Tower Technology at the Victorville 2 Hybrid Power Project."

Response:

The bulk of the substance of the 2006 Bibb evaluation of alternative cooling technologies for the VV2 Project was provided in AFC Section 5.3.1, Cooling Technology Alternatives. Additional

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

data developed by Bibb comparing wet, dry, and hybrid wet-dry cooling for the Project were provided in the response to CEC Data Request 84 submitted to the CEC on July 23, 2007. These two submittals fully cover the material provided in the September 2006 Bibb report.

Data Request 20

Please discuss the discrepancy between the average efficiency penalty for dry cooling identified by the CEC and presented in the AFC.

Response:

The estimated efficiency penalty for dry cooling for the VV2 Project presented in the AFC was based on an analysis by qualified engineers of Bibb and Associates who are experienced in power plant design. The efficiencies of different power plant cooling technologies are highly dependent on site-specific factors (e.g., temperature and humidity) that affect circulating water temperatures and resulting turbine backpressures that affect steam turbine generation efficiency. The cooling technology evaluation for the VV2 Project that was presented in the AFC (supplemented by the response provided to CEC Staff Data Request 84 submitted on July 23, 2007), reflect the conditions that the Project will encounter at the proposed site in Victorville. It is the view of the VV2 Project Applicant that the site-specific analysis prepared for the VV2 Project is more relevant than analyses prepared for other projects at other locations.

Data Request 21

Please describe any use of SF6 in electrical equipment including circuit breakers, current-interruption equipment, gas-insulated transmission lines, gas-insulated transformers, and gas-insulated substations planned for the VV2 Project.

Response:

Circuit breakers contain pressurized SF6 gas housed in bushings that completely surround contacts internal to the circuit breaker.

Data Request 22

Please provide the quantity of SF6 that will be used in equipment and the quantity of the gas that will be stored on site.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

Response:

VV2 Project circuit breakers will contain approximately 160 lbs of SF6. There is no need to store additional SF6 onsite due to the inherent reliability of the equipment.

Data Request 23

Please estimate annual and life-time SF6 emissions due to leakage, storage, and handling from the VV2 Project.

Response:

The SF6 leakage rate from operating equipment is guaranteed at 0.5 percent per year and can be kept below 0.2 percent/year with current best technology. At the maximum guaranteed leak rate of 0.5 percent, this corresponds to 0.8 lbs/year, or 9 tons/year of CO2 equivalent (CO2e). The more probable, technically feasible leak rate is 0.2 percent, which corresponds to approximately 108 tons of CO2e over the planned 30-year VV2 Project lifetime.

Data Request 24

Please identify best management practices for storage, handling, recovery, and recycling of SF6 and how these would be implemented at the VV2 Project.

Response:

There is no need to store additional SF6 onsite due to the inherent reliability of the Project equipment. During normal operations, there will be no recycling of SF6 since it is contained in a closed system and is not consumed. In the unlikely event that the equipment malfunction and requires SF6 recharging and/or replacement, a qualified contractor/SF6 recycler will be contracted to perform such services. The SF6 contractor/recycler will be required to have the necessary training and equipment to capture SF6 in the system and thus to prevent release to the atmosphere during maintenance activities. See the documentation of the standard SF6 maintenance, leak detection and repair procedures provided on the enclosed CD.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

Data Request 25

Please specify the type of leak detection system that would be employed at the VV2 Project. Please indicate whether advanced leak detection systems would be installed, e.g., laser imaging systems, or justify if not.

Response:

Leak detection is provided by means of system pressurization, monitoring of that pressure, and alarms when a drop in pressure is detected. The standard operating pressure will be 80 psig with an alarm set at 77 psig and lockout occurring at 72.5psig. There will be an overpressure relief valve set to release at 124 psig. This leak detection system is considered adequate and a more elaborate leak detection system is not necessary.

Data Request 26

Please discuss maintenance of high-voltage equipment and leak detection and repair procedures that would be implemented at the VV2 Project.

Response:

See the response to Data Request Response.

Data Request 27

Please discuss whether the VV2 Project would install SF6 recycling equipment that would allow capturing and recycling SF6 during equipment maintenance and retirement. If the answer is no, please provide a justification.

Response:

See the response to Data Request 24.

Data Request 28

Please discuss whether the City would be willing to install state-of-the art equipment with the guaranteed lowest leak rates.

**VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2**

Technical Area: Air Quality

Response Date: August 29, 2007

Response:

See the response to Data Request 23.

Data Request 29

Please indicate whether the City would be willing to participate in the U.S. EPA's SF6 Emission Reduction Partnership for Electric Power Systems.

Response:

The VV2 Project will be a new, state-of-the-art power generating facility. As noted in the response to Data Request 23, the plant's operating equipment will be designed, constructed, and operated to minimize emissions and hence participation in the EPA program is not necessary to reduce SF6 emissions.

Data Request 30

Please quantify annual emissions of greenhouse gases including CO2, CH4, N2O and SF6 for both the construction phase and operational phase of the VV2 Project.

Response:

For greenhouse gas emissions during construction, please refer to Applicant's objection to Data Request 30 docketed on August 17, 2007. For greenhouse gas emissions from vehicles during operations, please refer to Applicant's objection to Data Request 12 docketed on August 17, 2007.

The annual GHG emissions for CO2, CH4, N2O and SF6 from sources at the VV2 Project are provided in the table immediately below based on emission factors from the California Climate Action Registry (CCAR) Power and Utility Protocol, Version 1.0. The annual natural gas usage for the combustion turbines, duct burners, auxiliary boiler, and HTF heater are taken from Table 6.3-46, AFC Volume III Data Adequacy Supplement, submitted in April 2007.

The annual diesel usage for the fire water pump and the emergency diesel generator are taken from AFC Appendix G.4. The SF6 emission rate is based on the amount of in-use SF6 and the manufacturer guaranteed leak rate. The estimated annual GHG emissions (CO2e) for operation of the VV2 Project are shown in the following table.

**VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2**

Technical Area: Air Quality

Response Date: August 29, 2007

CO2	Number of Units	Annual Usage (hrs/yr)	Fuel Type	Max Annual Heat Input (MMBtu/hr)	Emission Factor ¹ (kg C/MMBtu)	Oxidation Fraction ²	CO2	CO2e
							Annual Emissions (tonnes/yr)	Annual Emissions (tonnes/yr)
GE 7FA Combustion Turbine	2	8,760	Natural Gas	1,736.4	14.47	0.995	1,606,005	1,606,005
HRSG Duct Burner	2	8,760	Natural Gas	424.3	14.47	0.995	392,437	392,437
Auxiliary Boiler	1	500	Natural Gas	35.0	14.47	0.995	924	924
HTF Heater	1	1,000	Natural Gas	40.0	14.47	0.995	2,112	2,112
Fire Water Pump	1	50	Diesel	1.3	19.95	0.990	5	5
Emergency Diesel Generator	1	50	Diesel	19.5	19.95	0.990	70	70

CH4	Number of Units	Annual Usage (hrs/yr)	Fuel Type	Max Annual Heat Input (MMBtu/hr)	Emission Factor ³ (kg/MMBtu)	CH4	CO2e
							Annual Emissions (tonnes/yr)
GE 7FA Combustion Turbine	2	8,760	Natural Gas	1,736.4	0.003901	118.68	2,492
HRSG Duct Burner	2	8,760	Natural Gas	424.3	0.003901	29.00	609
Auxiliary Boiler	1	500	Natural Gas	35.0	0.003901	0.07	1
HTF Heater	1	1,000	Natural Gas	40.0	0.003901	0.16	3
Fire Water Pump	1	50	Diesel	1.3	0.000907	0.0001	0
Emergency Diesel Generator	1	50	Diesel	19.5	0.000907	0.0009	0

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

N2O	Number of Units	Annual Usage (hrs/yr)	Fuel Type	Max Annual Heat Input (MMBtu/hr)	Emission Factor ³ (kg/MMBtu)	N2O Annual Emissions (tonnes/yr)	CO2e Annual Emissions (tonnes/yr)
GE 7FA Combustion Turbine	2	8,760	Natural Gas	1,736.4	0.001361	41.40	12,835
HRSG Duct Burner	2	8,760	Natural Gas	424.3	0.001361	10.12	3,136
Auxiliary Boiler	1	500	Natural Gas	35.0	0.001361	0.02	7
HTF Heater	1	1,000	Natural Gas	40.0	0.001361	0.05	17
Fire Water Pump	1	50	Diesel	1.3	0.000358	0.00002	0
Emergency Diesel Generator	1	50	Diesel	19.5	0.000358	0.00035	0
SF6	In Use SF6 (lbs)	Leak Rate (%/yr)				SF6 Annual Emissions (tonnes/yr)	CO2e Annual Emissions (tonnes/yr)
Circuit Breakers	160	0.50 %				0.00036	9
Total Operational CO2e Emissions (tonnes/yr)							2,020,664

1. Power and Utility Protocol, Version 1.0, Table 5.1, California Climate Action Registry.
2. Power and Utility Protocol, Version 1.0, Table 5.2, California Climate Action Registry.
3. Power and Utility Protocol, Version 1.0, Table 5.3, California Climate Action Registry.

Global Warming Potential

CO2	1
CH4	21
N2O	310
SF6	23,900

Power and Utility Protocol, Version 1.0, Table 5.4, California Climate Action Registry.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

Data Request 31

Please indicate whether the City would be willing to implement measures to reduce the VV2 Project's greenhouse gas emissions. If not, please discuss why the City does not deem mitigation of greenhouse gas emissions necessary.

Response:

On a typical day with solar thermal generation, the carbon metric for the VV2 Project will be approximately 760 lbs CO₂/MW-hr. This carbon metric is less than 70 percent of the performance standard of 1,100 lbs CO₂/MW-hr defined by the California Public Utilities Commission (CPUC) under SB1368. Through its innovative hybrid concept whereby the facility includes 50 MW of solar thermal generation capacity to produce a portion of its electrical output, the VV2 Project inherently reduces GHG emissions beyond that of a "typical" highly efficient modern natural gas fired combined-cycle power plant. Furthermore, projects such as the VV2 Project are key components of the strategy under AB32 and related measures to reduce GHG emissions in California. Because of the 1,100 lbs/MW-hr performance standard established under SB1368, coal-fired generators in the future will be unable to enter into long-term contracts to sell their power in the California market. To make up for this loss of generating capacity, the CPUC, ARB, and CEC are encouraging the development of more efficient and innovative power generation alternatives such as the VV2 Project to displace less efficient coal generation.

Data Request 32

Please indicate whether the City would be willing to participate in the California Climate Action Registry. If yes, please identify the methodology for estimating greenhouse gas emissions, e.g., methodologies developed by the Intergovernmental Panel on Climate Change ("IPCC"). If the answer is no, please explain why the City does not deem participation necessary.

Response:

The California Climate Action Registry (CCAR) is a voluntary registry. The CCAR was instrumental in the formation of Climate Registry in 2007. Once the Climate Registry is operational, voluntary GHG emissions reporting to the CCAR will be transferred to the Climate Registry. Thus, by the time the VV2 project is operational in 2010, the CCAR will not be accepting GHG inventory registrations.

The power sector will be one of the industry sectors covered by the mandatory GHG reporting under AB32 that will begin in 2012. By the time the VV2 plant is completed and operational in

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Air Quality

Response Date: August 29, 2007

2010, voluntary reporting to the CCAR will not exist and mandatory reporting to the Air Resources Board will commence in a little over a year. As reporting is for the past year's emissions, the first full year of reporting for the VV2 Project would be in 2011, the first year likely to be covered by mandatory reporting. Once mandatory reporting to the ARB occurs under AB32, the benefits of a voluntary reporting to the Climate Registry will be uncertain. Therefore, VV2 is not in a position at this time to commit or not commit to joining the Climate Registry.

The protocols that will be in place for reporting in 2012 are not known at this time.

Data Request 67

Please estimate the change in impacts if duct burners were eliminated.

Response:

The duct burners are considered an integral part of the facility design, and will maximize the efficiency of the VV2 Project. Since the mitigation already proposed reduces the facility's impacts to insignificance, additional mitigation is not needed. Furthermore, see Applicant's objection to Data Request 30 docketed on August 17, 2007.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Public Health

Response Date: August 29, 2007

Data Request 33

Please discuss and quantify potential emissions of toxic byproducts from SF6 due to electrical discharges.

Response:

After more than 30 years of successful practical experience, the handling of SF6 in gas-insulated electric power equipment is a well established process.

SF6 is non-toxic and biologically inert. Similar to CO2, SF6 is heavier than air and may accumulate if released into unventilated rooms. It may thereby replace oxygen. This normally does not constitute a suffocation hazard because the SF6 quantities contained in electric power equipment are too small to cause dangerously high concentrations in the air. Adequate ventilation should be provided for those locations where large quantities of SF6 are stored in small rooms or otherwise confined spaces.

SF6 decomposition products caused by electrical discharges in normally operating equipment do not constitute a health hazard because they are contained within/removed by absorbers. Toxic decomposition may be generated in electrical discharges. However, toxic emissions are released only in the rare event of heavy failure arcing (switchgear failure or internal arcing) that results in the loss of SF6 containment. In addition, due to the small amount of SF6 in any single component, the absolute amount of potential toxic generation during a heavy failure arcing event is small. Any released emissions would be quickly diluted and chemically transformed into less toxic products by normal atmospheric turbulence. SF6 breakdown products are readily detected by odor at concentrations that are not yet health-risk relevant. With proper safety precautions and personnel instruction, no health risk is incurred.

Highly toxic SF6-decomposition products such S2F10 do not constitute a significant health hazard. This is because they are only produced in extremely low quantities and are readily decomposed by contact with objects.

Data Request 34

Please indicate how VV2 Project personnel would be trained to handle SF6 and its hazardous byproducts.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Public Health

Response Date: August 29, 2007

Response:

See the response to Data Request 24.

Data Request 35

Please revise the cooling tower toxic emissions to account for the maximum TDS content of 5,000 ppmw in cooling tower circulating water and include emissions resulting from makeup water conditioning chemicals and waste streams routed to the cooling tower.

Response:

The number of cycles of concentration, rather than the TDS content of the circulating water, is used to calculate the concentrations of toxic air contaminants (TACs) in the circulating water. The cooling tower will be operated at a maximum of eight cycles of concentration. TAC emissions from the cooling tower have been revised to account for a maximum of eight cycles of concentration. Revised TAC emission calculation spreadsheets are provided electronically in a password protected format on the enclosed CD.

The water conditioning chemicals (sulfuric acid, organic phosphate, and sodium hypochlorite) will not volatilize from the cooling tower. The amount that could potentially be released to the atmosphere from the cooling tower is limited to the amount carried in the tower drift. Because sulfuric acid reacts with the alkalinity in the cooling tower makeup and will not be present in the circulating water as sulfuric acid, this acid will not be present in the drift or cooling tower blowdown. Similarly, much of the sodium hypochlorite will react in the circulating water system with only a small residual chlorine level maintained that will be necessary to control biofouling within the system. The non-toxic organic phosphate does not react, so the amount that will be discharged to the atmosphere or in the cooling tower blowdown will be equal to the amount fed to the system.

Although emissions of sodium hypochlorite will be negligible, the use of sodium hypochlorite can lead to emissions of chloroform. Cooling tower chloroform emissions from onsite use of sodium hypochlorite were not accounted for in the TAC emissions presented in the AFC. The revised cooling tower TAC emissions include these chloroform emissions. The final report of a study of chloroform emissions and concentrations in the South Coast Air Basin conducted for the California Air Resources Board, (Rogozen, M.B. et al., Sources and Concentrations of Chloroform Emissions in the South Coast Air Basin, Final report to California Air Resources Board, Contract A4-115-32, April 8, 1988.) used results from chloroform measurements at eight cooling towers to develop an

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Public Health

Response Date: August 29, 2007

emission factor of 0.0034 lb chloroform per lb. chlorine added. The following equation was used to calculate the chloroform emissions from the cooling tower:

$$\text{Emissions (lb/yr)} = \text{EF}_{\text{T,Ch}} \times A_{\text{H}} \times D_{\text{H}} \times C_{\text{H}} / 100 \times 0.95 \times 12$$

where:

- $\text{EF}_{\text{T,Ch}}$ = Emissions factor for chloroform from cooling towers (lb chloroform/lb chlorine added)
- A_{H} = Sodium hypochlorite solution addition rate (gal/month)
- D_{H} = Sodium hypochlorite solution density (lb/gal)
- C_{H} = Sodium hypochlorite concentration (wt. percent)
- 100 = Factor to convert wt. percent to wt. fraction
- 0.95 = Pounds chlorine equivalent/lb sodium hypochlorite
- 12 = Months/year

The VV2 Project's sodium hypochlorite use is expected to be about 2,500 gallons per month.

TAC emissions from fire water pump and emergency generator testing have also been revised. Annual emissions in AFC Appendix K.1 for this equipment were based on 300 hours of operation per year. However, operation for testing and maintenance of the fire water pump and the emergency generator will be limited to 50 hours per year (AFC p. 6.3-44), and annual TAC emissions have been revised to reflect the lower annual operating hours.

A revised health risk assessment (HRA) was conducted that incorporates the revised cooling tower, fire water pump and emergency generator TAC emissions. The HRA modeling files are provided electronically on the enclosed CD. Results for the point of maximum impact (PMI) are summarized in Table DR35-1. Revised health risks are below the significance levels. Therefore, health risks will be less than significant.

Table DR35-1
Revised HRA Results at the Point of Maximum Impact

Heal Risk	Result from HRA	Significance Level
Maximum Individual Cancer Risk	0.70	1 per million
Maximum Chronic Non-Cancer Hazard Index	0.0064	1.0
Maximum Acute Hazard Index	0.094	1.0

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Public Health

Response Date: August 29, 2007

Data Request 36

Please discuss the cumulative impacts due to toxics emissions from the VV2 Project, the HDPP, and the SLCA. Please provide a quantitative health risk assessment for the combined emissions including cancer and non-cancer acute and chronic health impacts.

Response:

Please refer to Applicant's objection to Data Request 36 docketed on August 17, 2007.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

Data Request 37

Please amend Table 6.7-3 to include the quantity of each hazardous chemical used at the VV2 Project per year and the annual number of deliveries for each hazardous chemical.

Response:

A revised Table 6.7-3 is provided below.

Table 6.7-3 Summary of Special Handling Precautions for Large Quantity Hazardous Materials						
Hazardous Material	Relative Toxicity¹ and Hazard Class²	Permissible Exposure Limit	Storage Description (Capacity)	Storage Practices and Special Handling Precautions	Annual Quantities Used	# of deliveries per year
Natural Gas (methane)	Low toxicity; Flammable gas	None Established	Pressurized carbon steel pipeline	Pressure relief valves	1.004 x 10 ⁹ lbs/year	N/A - Continuously delivered to the site via pipeline
Hydrogen Gas	Low toxicity; Flammable gas	None Established	In generator cooling loop 320 lb, with maintenance inventory of 650 lb in a "tube trailer"	Pressure safety tank, crash posts, pressure relief valves	320 lb for each	1 to 3 trailers per year
Aqueous Ammonia (ammonium hydroxide), <20% solution	High toxicity; Corrosive, Irritant	25 ppm (NIOSH)	Carbon steel tank (30,000 gal)	Spill containment, ammonia detectors and alarms and RMP	354,000 gallons per year	52
Sodium Hydroxide, 50% solution	High toxicity; Corrosive	2 mg/m ³ OSHA	Carbon steel tank (7,500 gal)	Isolated from incompatible chemicals and secondary containment area	253,500 gal/year	43

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

Sodium Hypochlorite, 12.5% solution	High toxicity; Poison-B, Corrosive	0.5 ppm (TWA), 1 ppm (STEL) as Chlorine	Plastic tank (2,500 gallons)	Secondary containment	30,000 gal/year	15
Sulfuric Acid, 93% solution	High toxicity; Corrosive, water reactive	1 mg/m ³ OSHA	Lined, carbon steel tank (10,000 gal)	Isolated from incompatible chemicals, lined tank, and secondary containment	282,212 gal/year	36
Boiler Water Treatment Chemical - Phosphate Feed, Nalco BT 3000			400 gallon port-a-feed plastic tote	Secondary containment	1,630 gal/year	4 deliveries per year, up to 2 totes per delivery
Boiler Water Treatment Chemical - Oxygen Scavenger Feed, Nalco Eliminox			200 gallon port-a-feed plastic tote	Secondary containment	983 gal/year	4 deliveries per year, up to 2 totes per delivery
Boiler Water Treatment Chemical - Amine Feed, Nalco 352			75 gallon port-a-feed plastic tote	Secondary containment	549 gal/year	4 deliveries per year, up to 4 totes per delivery
Carbon Dioxide	Low toxicity; Non flammable gas	5,000 ppm TWA (9,000 mg/m ³)	Carbon steel cylinders, 24 tons maximum onsite, 6 tons in the largest container	Carbon steel tank with crash posts	6 tons/year	4
Calcium Oxide (Lime)	Low toxicity; ORM-B	2 mg/m ³ , 8-hour TWA	4,000 pounds maximum, 50-pound bags on pallets, mixed with water as needed in	Secondary containment for tank; dry, indoor storage for dry material	102,347 lb/year	52

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

			2,000-gallon fiberglass tank			
Ferric Sulfate, 35% solution	Moderate toxicity; ORM-E	1 mg/m ³	Carbon steel or fiberglass tank, 8,000 gal	Secondary containment	96,000 gal/year	15
Magnesium Chloride, 31% solution	Low toxicity; Highly toxic	Not established	Carbon steel or fiberglass tank, 10,000 gal	Secondary containment	120,000 gal/year	15
Sulfur hexafluoride gas	Low toxicity; Non flammable gas	Not established	960 lb Used in switchgear	None	Leakage less than 4.8 lb/year	1 40.8 lb or less delivery every 10 years
Lube Oil	Low toxicity Hazard class – NA	Not established	Carbon steel tanks, largest container 1,200 gal, 4,000 gal total in tank storage, maintenance inventory in 55-gallon steel drums	Secondary containment area for each tank and for maintenance inventory	1000 gal/year	2 deliveries per year (based on conversation with Dave Frieze)
Insulating Oil	Low toxicity Hazard class – NA	Not established	Carbon steel transformers - largest vessel 16,000 gal, total inventory 65,000 gal, no maintenance inventory onsite	Used only in transformers, secondary containment for each transformer	No normal usage. Only replaced in the event of contamination	One delivery per contamination event. Frequency unpredictable

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

Diesel Fuel	Low toxicity; Combustible liquid	PEL not established, TLV 100 mg/m ³ (ACGIH)	Carbon steel tank (1,200 gallons [generator]), Carbon steel tank (300 gallons [fire-water pump engine])	Stored only in fuel tanks of emergency engines, secondary containment.	8,000 gal/year	1 delivery per month
Therminol VP-1	Moderate toxicity, Irritant; Combustible Liquid (Class III-B)	Biphenyl: 0.2 ml/m ³ ; Diphenyl ether: 1 ml/m ³ , OSHA	260,000 gallons in system, no additional storage	Continuous monitoring of fluid levels in system; prompt clean up and repair.	32,500 gal/year replaced, remainder sent back for recycling	1 replacement per year
Detergent (ZOK or equivalent)	Low toxicity Hazard class – NA	None	55-gallon plastic drums or 330-gallon plastic totes	Brought onsite only when required for maintenance cleaning of the turbines.	1320 gal/year	2 deliveries per month, 4 to 8 barrels per delivery

1. Low toxicity is used to describe materials with an NFPA Health rating of 0 or 1. Moderate toxicity is used to describe materials with an NFPA rating of 2 or 3. High toxicity is used to describe materials with an NFPA rating of 4.
2. NA denotes materials that do not meet the criteria for any hazard class defined in the 1997 Uniform Fire Code
3. Analysis is not complete and is in progress. Material list and all Values are preliminary and will be revised as required at a future date.

Data Request 38

Please clarify the ammonia content of aqueous ammonia that would be used for the VV2 Project.

Response:

AFC Table 6.7-3 contained a typographical error that incorrectly showed the aqueous ammonia to be used as exceeding 20 percent ammonia. As stated correctly in the narrative, the aqueous ammonia used for the VV2 Project will have an ammonia content of less than 20 percent.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

Data Request 39

Please provide information which type(s) of herbicide(s) would be used, provide an MSDS for each herbicide and formulation ingredient that would be used, and discuss the toxicity of each.

Response:

It should be noted that in the Background discussion for this set of data requests concerning herbicide use to this section of data requests, the statement that the solar field “must be kept free of all vegetation in order to avoid grass or brush fires that would have the potential to destroy the solar plant” is misleading. The solar fields are kept clear of vegetation as a matter of simple and practical housekeeping and safety. Certain vegetation, such as tumble weeds, are problematic from a housekeeping standpoint, can block the free rotation path of the collector mirror and cause mirror breakage, and can hide newly broken glass, thus both creating a safety hazard for personnel and a tire hazard for equipment. It also interferes with the rapid identification of those instances when broken glass may occur. Quick identification of such occurrences helps to ensure that potential collateral damage is mitigated.

Additionally, while certain vegetation, if left unattended, can be ignited during certain non-operational collector angles, there is no part of the equipment in the solar field that has any likelihood of “catching fire”. At worst, a brush fire would be considered a nuisance event.

Two general types of herbicides are typically used to maintain proper industrial housekeeping standards: pre-emergent herbicides are applied to prevent the germination of unwanted growth, and contact herbicides are utilized in those instances where unwanted growth may present itself.

As the land area of the solar field will be cleared of vegetation during the Project construction phase, the types of errant vegetation that may appear afterwards will not be initially known. Thus, the exact types of herbicides that are known to be most effective in treating such growth is cannot be established until the type of errant growth can be identified.

Data Request 40

Please provide information regarding the estimated frequency of herbicide application at the solar field, the annual quantity of herbicide(s) used, the active ingredient content in the formulation(s), the type of application, and the amount active ingredient of applied per application.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

Response:

As indicated above, annual quantities and active ingredients cannot be determined until the type and amount of errant vegetation can be identified. Both as a good business practice (avoiding waste of a purchased commodity) and good environmental, safety, and health management, prudent application practices will be determined by professionals certified by the State of California having a "Qualified Applicators License". The types and quantities of herbicides that will be used will be only what is needed to do the job.

Data Request 41

Please discuss herbicide container storage and disposal.

Response:

Bulk herbicides are typically transported in forklift accessible "totes" and, when staged for usage, placed on shaded, overspill pallets. When the containers are emptied, they are returned to the supplier for reuse.

Data Request 42

Please indicate whether professional pesticide applicators or Project personnel would apply the herbicide(s). If the latter, please indicate how personnel would be trained in pesticide application. If not, please discuss any pesticide application training Project personnel would receive.

Response:

Only contract services that maintain the appropriate State qualified applicators licenses to apply such products would be allowed to do so. In the event that such products would be applied by Project personnel, they would be required to work under the direct supervision of a person that holds a California qualified applicators license and possesses the requisite training as dictated through that qualification, as well as other such training as is appropriate and required by Cal OSHA.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

Data Request 43

Please discuss applicator exposure to the selected herbicides and how worker protection standards would be implemented.

Response:

Worker and applicator exposure protection standards are dictated by the requirements of the training and equipment as specified by the State qualified applicators license. The Project will comply with these requirements.

Data Request 44

Please discuss best management practices for herbicide applications to ensure protection of groundwater and indicate how this would be implemented at the Project.

Response:

The California qualified applicators license program is overseen by the California Department of Agriculture, and the application process is strictly dictated by this agency. Qualified personnel following the prescribed application process is considered "best management practice". As a practical matter, herbicides are only effective when applied properly on the specific germination or growth area, which is either a topical application such as on a garden/lawn or within the top quarter of an inch of seed germination area.

Data Request 45

Please provide your definition of "serious hazardous materials incidents."

Response:

The term "serious incidents" is defined in the U.S. Department of Transportation, Hazardous Materials Safety, Hazardous Materials Information System. It is defined as "incidents that involve: a fatality or major injury due to a hazardous material; closure of a major transportation artery or facility or evacuation of six or more persons due to the presence of a hazardous material; or a vehicle accident or derailment resulting in the release of a hazardous material".

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

Data Request 46

Please demonstrate how the frequency factor of 0.0022 incidents per million vehicle miles traveled for serious hazardous materials incidents was derived. Please provide all calculations and cite to the appropriate tables or text for any values from the cited DOT document. Please demonstrate that this frequency factor is applicable to estimating catastrophic tanker truck failure.

Response:

Using available U.S. DOT statistics, it is possible to compute an accident frequency for serious hazardous material accidents involving large trucks (greater than 10,000 pounds gross vehicle weight). For the three year period 2000 – 2002, there was on average of 452 serious incidents per year in the U.S. involving a release of hazardous materials on highways (U.S. DOT, 2004; see full reference below). For the same period, large trucks traveled an average of 209,700 million vehicle miles per year (U.S. DOT, 2005; see full reference below). Assuming that all serious hazardous material incidents involve large trucks, the incident rate for large trucks can be computed as one serious hazardous material incident per 463 million vehicle miles, or 0.0022 incidents per million vehicle miles.

U.S. Department of Transportation, 2004, Traffic Safety Facts 2002: A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System, Table 9. DOT HS 809 620, National Highway Transportation Safety Administration, Website <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSFAnn/TSF2002Final.pdf>, accessed 9/23/2005.

U.S. Department of Transportation, 2005. Hazardous Materials Safety Information System, Serious Incidents (New Definition). Website <http://hazmat.dot.gov/pubs/inc/data/10yearfrm.htm>, accessed 9/9/2005.

Data Request 47

Please estimate the probability for accidents and catastrophic failure for all hazardous materials transports including but not limited to ammonia, sulfuric acid, sodium hydroxide, and sodium hypochlorite.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

Response:

The publicly available U.S. Department of Transportation, Hazardous Materials Safety, Hazardous Materials Information System does not break down serious hazardous material spills according to individual chemicals. Such information is not available.

Data Request 48

Please identify all hazardous materials transportation routes to the VV2 Project including a description of the types and names of roads traveled, *e.g.*, interstate, highway, local paved or unpaved road, etc. Please identify any sensitive receptors along these transportation routes.

Response:

Hazardous materials transportation routes for the Project are expected to involve use of Interstate 15 to the Victorville vicinity. In Victorville, the D Street exit from I-15 to the southeast of the Project site would be the expected route. From that point, the route would briefly follow National Trails Highway under I-15 to Air Expressway, then west on Air Expressway to Adelanto Road. The route then would turn north on Adelanto Road, follow Adelanto Road north to Colusa Road then east on Colusa to Helendale Road. The Project site entrance is from Helendale just north of the Colusa intersection. A possible alternative route would be to exit I-15 at its intersection with U.S. 395 about 15 miles south of the site and follow U.S. 395 north to Air Expressway, then east on Air Expressway to Adelanto Road, and then north on Adelanto, etc.

The Air Toxics Hot Spots Program Risk Assessment Guidelines published by CalEPA's Office of Environmental Health Hazard Assessment (OEHHA) indicate that sensitive receptors are individuals who may be more sensitive to toxic exposures than the general population (OEHHA, 2003). These include the very young, the elderly, and the ill (both acute and chronic illness). Thus, locations such as schools, daycare centers, hospitals, nursing homes, and residential care facilities are of concern. Two such institutions were identified along the two hazardous materials transportation routes: 1) a school on the property of SCLA approximately ¼ mile north of Air Expressway nearly two miles east of Adelanto Road (relevant only to the route using the D Street exit from I-15), and 2) the Federal correctional facility (which is assumed to have an infirmary) approximately ¼ mile south of Air Expressway approximately two miles east of Adelanto Road (also relevant only to the D Street route that approaches Adelanto Road from the east).

It should be noted that hazardous materials transportation must comply with stringent DOT regulations in terms of storage containers, procedures, transporter personnel requirements, etc. As noted in the response to DR 46 above, based on historical data, the likelihood of hazardous

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

materials releases associated with transportation of such materials (primarily aqueous ammonia) for the VV2 Project is considered extremely low.

Data Request 49

Please model the potential airborne ammonia concentrations associated with an accidental catastrophic release of ammonia during delivery (e.g., with the U.S. EPA computer model RMP*COMP). Please determine out to which distance from the accident airborne ammonia concentrations would exceed the significance criterion and determine how many people would potentially be affected along the transportation routes.

Response:

The U.S. EPA RMP program does not require quantification of hazardous material spills involved with transport nor is the RMP*COMP model set up to explicitly model transportation sources. The worst-case analysis performed for the AFC assumed a larger amount of ammonia release than that contained in a tanker truck transporting ammonia to the facility. Therefore, the impact distance listed for the worst-case ammonia spill in the AFC is conservative in that it will be equal to or greater than the potential impact from a tanker truck accident. A tanker truck accident has such a low probability (0.0022 per million vehicle miles) as to be negligible.

Data Request 50

Please indicate whether the VV2 Project would require that hazardous materials transports would be conducted outside rush hours.

Response:

The VV2 Project does not expect to be required to conduct hazardous materials deliveries only outside of rush hours. However, as a practical matter, deliveries typically occur outside rush hours for efficiency reasons, i.e., to minimize the amount of time delivery vehicles spend dealing with traffic congestion. As is the case for the nearby HDPP facility, the VV2 Project expects to utilize a "Daylight Only Delivery" rule requiring hazardous material deliveries to be no earlier than one-half hour after sunrise and no later than one hour prior to sunset.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

Data Request 51

Please provide a detailed description of the automated continuous monitoring device for the VV2 Project's heat transfer system.

Response:

Continuous monitoring of the HTF system will include specific fluid inventory level and mass-flow monitoring. Each vessel within the HTF system has expected levels at various operating modes and temperatures that must be maintained within specified tolerances without initiating an audible operator alarm indication. Similarly, mass flow values are monitored with specific flow algorithms that incorporate volumes in relationship with system temperatures and mass-flow differential monitoring, and must be maintained within specified tolerances without initiating an audible operator alarm indication. Video monitoring of active HTF area equipment will also be visible to control room operators in the project control room.

Data Request 52

Please discuss the potential for leaks and spills of heat transfer fluid at the VV2 Project.

Response:

A properly designed project minimizes the potential for leakage and spills through the use of appropriate equipment design, containment, secondary containment, and the proper training of operation and maintenance personnel. As the nine existing solar thermal power plants in the Mojave Desert have been in operation for between 17 and 24 years, a relatively small number of incidents have occurred, as mentioned in the Background discussion. It should be noted that the incidents involved processes, technology, and equipment that are at least 17 years old. Each incident contributed to the body of knowledge and understanding that have been developed over the approximately 200 years of operating experience at the SEGS facilities. The equipment, materials, design, operational procedures, etc. utilized by the VV2 Project will reflect the lessons learned and resulting improvements from the entire SEGS operating history including incidents that involved HTF releases, and the potential for HTF releases at the VV2 Project would be expected to lower than at the existing SEGS plants

Data Request 53

Please discuss the procedures for cleanup in the event of a spill.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

Response:

For releases that occur on soil, the wet soil will be collected, placed in drums, and shipped offsite for disposal at an appropriately permitted waste management facility. For releases that occur on hard surfaces, absorbent material will be used, and to the extent that usable HTF can be recovered (i.e., by straining), it will be returned to the system. The absorbent material will be drummed and shipped offsite for disposal at an appropriately permitted waste facility.

Data Request 54

Please confirm that no additional heat transfer fluid storage is planned on site other than the fluid circulating in the HTF system.

Response:

No additional HTF will be stored onsite other than the fluid contained in the HTF piping system.

Data Request 55

Please discuss the logistics, quantities, and schedule for replenishing/replacing heat transfer fluid in the HTF circulating system.

Response:

Please see the response to CEC Data Request 109 submitted on July 23, 2007. This response addresses replenishment/replacement of HTF.

Data Request 56

Please provide a discussion of potential fire and explosion risks due to the flammability of Therminol VP.

Response:

It should first be noted that the above referenced 1999 fire did not occur at SEGS II nor did it involve Therminol. This fire occurred at SEGS I and involved a light mineral oil that was utilized

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Hazardous Materials Handling Response Date: August 29, 2007

in the solar technology of that particular plant (the first plant to be built in California in 1984). It occurred in a storage tank that was blanketed with natural gas (as is common in petroleum refineries) but is completely unlike any type of tank utilized in the HTF systems of subsequent or new solar plant designs. New designs (including the VV2 Project) only utilize expansion buffer tanks and are blanketed with nitrogen, an inert gas.

The 1994 incident was a result of an incomplete weld that was installed at the time of construction that finally failed after several years of operation. New quality control standards for welding processes would not allow this type of quality control error to occur during the construction of a new plant.

As was discussed in the response to Data Request 52, the design of the VV2 Project will build on the experience gained in the existing SEGS plants that have been operating for between 17 and 24 years. These lessons learned include both design/materials improvements and improved operational procedures as shown in the discussion above about the 1999 and 1994 incidents, and would be expected to reduce the risks associated with use of the solar HTF.

Also, new plant designs must be reviewed by third-party independent engineering firms to allow for appropriate risk analysis needed to meet financing and insurance criteria, and then approved by local fire authorities, before being permitted for construction or operation.

Data Request 57

Please provide a risk minimization plan.

Response:

As discussed above in the response to DR 56, the growing body of operating experience from the existing SEGS facilities have led (and will continue to lead) to improvements that reduce risks and otherwise benefit new solar thermal facilities such as the VV2 Project. Compliance with LORS and the continuing applications of lessons learned from existing facilities are considered sufficient to obviate the need for a specific Therminol risk minimization plan.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Noise

Response Date: August 29, 2007

Data Request 58

Please discuss whether support piles would be necessary for the VV2 Project. If the answer is yes, please identify what type of piles, cast-in-hole piles or driven piles, would be used for the VV2 Project.

Response:

On page 14 of 32, recognizing that detailed information on the Project's structural loads is not yet available, the Kleinfelder Preliminary Geotechnical Investigation Report (AFC Appendix C) states: "Based on our experience with similar projects, we anticipate that the proposed structures will be supported on shallow foundations," but that "our preliminary foundation recommendations include recommendations for both shallow and deep foundations in the event that deep foundations are selected for the proposed structures." Thus, Kleinfelder finds that deep foundations that would require use of support piles are unlikely, but includes mention of the possibility of the need for purposes of completeness.

If support piles unexpectedly turn out to be needed, additional evaluation will be performed to determine the type of piles that would be used.

Data Request 59

If support piles are necessary for the VV2 Project, please identify the type of pile driver that will be used to construct the supporting piles. Please identify the construction month during which pile drivers will be used. Please identify the number of hours per day pile driving would be conducted. Please identify the daily schedule for pile driving.

Response:

As noted in the response to CURE Data Request 58, the use of support piles is not expected to be necessary, but that additional evaluation will be performed if the need unexpectedly arises. This additional evaluation, should it become necessary, would address details such as the type of pile driver and the duration and schedule for its use.

Data Request 60

Please provide a discussion of potential noise impacts from pile driving on wildlife.

**VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2**

Technical Area: Noise

Response Date: August 29, 2007

Response:

As indicated in the responses to Data Requests 58 and 59, the need for pile driving during construction of the VV2 Project is not expected, and thus the potential noise impacts on wildlife of pile driving are not relevant. If circumstances change unexpectedly such that pile driving becomes necessary, the planning for implementation of the pile driving will include evaluation of potential noise impacts on wildlife and measures that could be taken to minimize such impacts, as needed.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Soil & Water Resources

Response Date: August 29, 2007

Data Request 61

Please document how the AFC's estimated water demand of 46 acre-feet for solar mirror washing was derived.

Response:

It first must be noted that the description of cleaning activities in the Background discussion for this data request is outdated and largely not applicable to modern cleaning methodology. Deluge sprays that spray two rows of solar collectors are not anticipated in new developments such as the VV2 Project as this technique is an outdated and inefficient use of time and water. The "Mr. Twister" vehicle is not applicable to new collector designs. The use of hydrofluoric acid was limited to solar plants that were built before the consequence of cooling tower drift on localized reflectivity was anticipated, and since publication of the 1999 Sandia study referenced in the CURE Background discussion concerning use of hydrofluoric acid as a cleaning medium, other safe and benign cleaning products have been found to replace hydrofluoric acid use.

Additionally, a newer, ultra-low water use method of cleaning has been developed utilizing a scrubbing technique. This techniques has become the mainstay of active cleaning at the Kramer Junction SEGS facility and is anticipated for use in new solar plants such as the VV2 Project.

The annualized quantity of water estimated in the AFC for use in mirro cleaning activities is only a conservative estimate based on a pro-rated amount of purified water consumption derived from historic usage at the Kramer Junction SEGS facility.

Data Request 62

Please provide a maintenance schedule for rinsing including expected frequency of rinsing of the solar mirrors.

Response:

The frequency of cleaning activities is dictated by actual measured reflectivity levels rather than by a predetermined schedule; activities that consume valuable labor, equipment, or purified water resources are not performed unless actual conditions require them. Generally, a scrubbing technique will be utilized during the months of increased solar potential. Depending on local weather and reflectivity conditions, this would likely occur between May and October on cycles of varying frequency, again depending on actual measured reflectivity levels and in the absence

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Soil & Water Resources

Response Date: August 29, 2007

of natural cleaning from rainfall. This scrubbing technique has been utilized in the Kramer Junction SEGS facility since 1999, as it minimizes water consumption.

Concurrently, a deluge technique, utilizing a forward "wetting" spray to dissolve dust into solution and a rinsing spray to carry solution off the mirror surface is used as required between scrubbing cycles to merely "knock the dust off." During the winter months, solar output potential is relatively low and the likelihood of natural rain cleaning generally precludes the requirement for any cleaning activities at all.

Data Request 63

Please demonstrate that no appreciable runoff would occur from the solar mirrors when cleaning the mirrors.

Response:

As was stated in the two previous responses, the development of cleaning technologies and methodologies has advanced tremendously since the information was published that was used to compile the Background discussion for this series of data requests. These advancements were driven by the necessary sharp focus on reducing costs and increasing efficiencies of solar thermal technologies. The cost of the ultra purified water was an important consideration in developing reflectivity maintenance programs that yield the highest level of cleanliness with the lowest possible water consumption. Therefore, methods that result in a minimum of unproductive runoff were sought and achieved.

Data Request 64

Please discuss the effects of routine watering on the desert soil below the solar troughs.

Response:

As noted in the response to Data Request 63, a minimum of "watering" of the desert soil is the objective in a cost-effective and efficient reflectivity program. Nonetheless, in the total 200 years of cumulative solar thermal plant operating experience at the SEGS plants, even before the topic of water conservation became as acute as it has in recent years, no noticeable effects other than a minor "drip pattern" have been observed on the soil beneath the solar collectors.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Soil & Water Resources

Response Date: August 29, 2007

Data Request 65

Please discuss whether the City expects to use hydrofluoric acid to clean heavily soiled mirror surfaces. If the answer is no, please indicate whether the City would be willing to accept this as a CoC.

Response:

As discussed in the response to Data Request 61, hydrofluoric acid has not been used for many years at any of the operating SEGS facilities and is not anticipated at the VV2 Project or any other solar plant in the future, because: (1) there are safe and effective products now available for hard water stains; and, (2) the relationship between cooling tower drift and the orientation of the solar field in consideration of prevailing wind patterns is now very well known.

Data Request 66

Please discuss whether the location of the cooling tower relative to the solar field was optimized for the least impact on reflector soiling from cooling tower drift.

Response:

Please see the response to Data Request 65.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Data Request 68

Please provide a list of all legally protected species and their specific legal status pursuant to state and/or federal law, e.g. federal Endangered Species Act, California Endangered Species Act, Migratory Bird Treaty Act, etc.

Response:

Each of the legally protected species and their specific legal status pursuant to State and/or Federal law is described in AFC Appendix H (the Biological Resources Technical Report or BTR), as well as in the May 2, 2007 Biological Assessment prepared for the VV2 Project consultation process involving the U.S. Environmental Protection Agency (EPA) and the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Federal Endangered Species Act.

Data Request 69

Please provide any and all documentation between the applicant and agencies regarding compliance requirements for the protection of plants and wildlife.

Response:

All documentation between the VV2 Project Applicant and regulatory agencies regarding the Project and compliance requirements for the protection of plants and wildlife has been provided to the CEC in the response to CEC Data Request 10 submitted on July 23, 2007.

Data Request 70

For each project component (i.e., power plant site, construction laydown area or particular transmission line segment), please list all of the species that occur at or within the vicinity of the particular project component, and describe each species' legal status, if any.

Response:

AFC Appendix H (the BTR) fully described the sensitive and special status species that could be affected by the VV2 Project. Potential direct, indirect and cumulative impacts were discussed for each "component" of the Project (i.e., plant site, laydown areas, linear utility features, etc.) The specific acreage of affected plant communities that could support wide-ranging wildlife species per each of these Project components, and thus be affected by the Project, was also addressed in

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

both the affected area description and mitigation measures portion of the BTR. Also as mentioned in the response to Data Request 68 above, the legal status of each special status species was described in the BTR.

Data Request 71

For each project component, please describe the direct and indirect impacts associated with each species listed above.

Response:

The anticipated and potential direct and indirect impacts associated with each sensitive and/or special status species identified as potentially affected by the Project are fully described in AFC Appendix H, the BTR.

Data Request 72

Please clarify which federal action agency or agencies would initiate section 7 consultation with the USFWS for the Project.

Response:

EPA requested initiation of formal consultation for the VV2 Project in a letter dated June 11, 2007, from Gerardo Rios (EPA) to Diane Noda (USFWS).

Data Request 73

Please describe the specific federal action(s) associated with the Project that would trigger section 7 consultation.

Response:

EPA requested initiation of ESA Section 7 consultation based on an application submitted to EPA by the Project for issuance of a Prevention of Significant Deterioration (PSD) permit for the Project pursuant to the Federal Clean Air Act.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Data Request 74

Please provide any correspondence or other documentation among the City, federal action agencies and state and federal wildlife agencies regarding section 7 consultation for the Project.

Response:

Please see the Project Applicant's response to CEC Data Request No. 10 submitted on July 23, 2007, which provided copies of all such correspondence to the CEC.

Data Request 75

Please explain whether section 7 consultation as described in the AFC would cover all components of the Project.

Response:

Yes. The Section 7 consultation will cover all components of the VV2 Project.

Data Request 76

For all field survey dates listed in the AFC, please specify the type of survey conducted (*e.g.*, general biological assessment only, general biological assessment concurrent with desert tortoise survey) and the actual portion of the study area that was covered.

Response:

The BTR (AFC Appendix H) fully described methods used to conduct the biological resources studies. The surveys followed established agency protocol for conducting a 100 percent desert tortoise and other special status species presence/absence assessment. Records of all potentially affected special status species known from the area were reviewed prior to conducting this work. Survey protocols were adjusted to incorporate a comprehensive methodology that would facilitate detection of these species.

Field surveys conducted for the Project utilized 30-foot wide belt transects in all portions of the Project area, which enabled an accurate, thorough characterization of general affected area biological resources and a description of all potentially affected plant communities. The USFWS document *Field Survey Protocol for Any Federal Action That May Occur within the Range of the*

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Desert Tortoise (Ventura Office, FWS, January 1992) provided direction for the Desert Tortoise survey efforts; as did the BLM document *Desert Tortoises and the Bureau of Land Management - A Biological Consultant's Guide-Endangered Species Act Compliance, Biological Survey Protocol & Biological Assessment Format* (T. Egan 1996; revised R. Parker 2002).

Field surveys for desert tortoise were further augmented by localized small mammal trapping efforts designed to ascertain the presence/absence of the Mohave ground squirrel (MGS) and focused efforts to determine the potential degree of burrowing owl use. The MGS surveys were conducted according to protocol developed and approved by the California Department of Fish and Game (CDFG). Burrowing owl survey protocol and mitigation guidelines followed recommendations specified in the document, "*Burrowing Owl Survey Protocol and Mitigation Guidelines*" prepared by the California Burrowing Owl Consortium (1993). All Project surveys were conducted by qualified personnel familiar with affected area flora and fauna.

The characterizations of potential Project impacts to biological resources in AFC Appendix H and the May 2, 2007 Biological Assessment prepared for the Project were prepared by qualified, knowledgeable personnel with extensive experience in assessing natural resource impacts in the Mojave Desert. The FWS document *Procedures for Endangered Species Act Compliance for the Mojave Desert Tortoise* (FWS Regions 1, 2 and 6; 1990) and the BLM document mentioned above, *Desert Tortoises and the Bureau of Land Management -- A Biological Consultant's Guide-Endangered Species Act Compliance, Biological Survey Protocol & Biological Assessment Format*, were both reviewed and utilized in preparing these documents for the Project.

The document *Guidelines for Handling Desert Tortoises during Construction Projects* (Desert Tortoise Council, Edward LaRue, Editor [revised 1999]) was also reviewed and relevant information incorporated into both the AFC and the Biological Assessment. The CDFG's Staff Report on Burrowing Owl Mitigation (1995) was also referred to in preparing the related narrative in the AFC and Biological Assessment.

Data Request 77

Please specify which other biological reports were used to augment the field surveys and specify the "other" biologists that were consulted.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Response:

Several biological reports prepared by AMEC Earth & Environmental Inc. (which conducted the biological studies and prepared AFC Appendix H) in the immediate vicinity of the Project site were reviewed to focus field survey efforts and augment collected field survey data. These AMEC reports include:

Forecast Homes Tentative Tract 16536 Biological Resources Assessment Report; Bear Valley Road and Hwy 395, Victorville, CA; 2004

Forecast Homes Tentative Tract 15418 Biological Resources Assessment Report; West Victorville, CA; 2004

Frontier Homers Daybreak South and Daybreak West CESA Section 2081 Monitoring Reports; Aster and Seneca Roads, Adelanto, CA; 2004

Frontier Homes Tentative Tract 18211 Biological Resource Update Report; Adelanto, CA; 2006

Corman Leigh Communities Verbena West Biological Resources Assessment Report; Verbena Road and Hwy 395, Victorville, CA; 2005

Corman Leigh Communities Verbena West Biological Resources Mitigation Plan; Verbena Road and Hwy 395, Victorville, CA; 2005

Pleasant Valley Homes Verbena East Biological Resources Assessment Report; Monte Vista Road and Hwy 18, Victorville, CA; 2005

The West Mojave Plan Amendment to the California Desert Conservation Area Plan (BLM 2005) was also reviewed; the West Mojave Plan contains extensive species account background information on potentially occurring biological resources in the vicinity of the Project. The West Mojave Plan also discusses the legal status of all special status species, ongoing/planned conservation planning for these species, and mitigation commonly applied in regional projects where these species may be impacted.

Other documents utilized included a biological report prepared for expansion of the Victor Valley Wastewater Reclamation Authority's (VWRA) Regional Wastewater Treatment Plant, which is approximately one mile from the VV2 Project plant site and is the source of the reclaimed water that will be used for Project cooling and other industrial purposes (Tom Dodson and Associates 2003); a Draft Environmental Impact Report (EIR) and a Focused Desert Tortoise, Focused Burrowing Owl and General Biological Survey for the Southern California Logistics Airport

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

(SCLA) Specific Plan Amendment and Rail Service Project (Tom Dodson and Associates 2003); and the High Desert Power Project EIR/Environmental Impact Statement (EIS). These were all reviewed in formulating appropriate survey methodology and in preparing the impact assessment for the VV2 Project.

Ms. Tonya Moore of CDFG; Ms. Mary Dellavalle of the Lahontan Regional Water Quality Control Board's Victorville Office; Dr. Larry LaPre of BLM; Mr. Gerry Salas of the U.S. Army Corps of Engineers; and Ms. Judy Hohman and Mr. Ray Bransfield, both of USFWS, were also consulted regarding survey protocol and assessment procedures used for the Project.

Data Request 78

Please discuss the accuracy of the surveys the City conducted to estimate the number of special-status species on the Project site.

Response:

The accuracy of the surveys conducted to estimate the number of special-status species is considered fairly precise. The survey methodology is described in detail in AFC Appendix H. As described in AFC Appendix H, the AFC and the Biological Assessment, several of the species comprehensively identified as potentially affected by the VV2 Project have a low likelihood of actually occurring within the affected area or being impacted in any way by the Project.

Data Request 79

Please detail any alterations to proposed mitigation that could be necessary if surveys resulted in lower estimates of abundance than the site's actual abundance.

Response:

Biological survey data collection for Project permitting purposes has been completed and documented in the AFC and Biological Assessment. Additional pre-construction survey work is expected and these surveys will allow refinement of mitigation measures for impacts to identified special status species if higher numbers of individuals of these special status species are encountered, i.e., identify additional animal translocation needs; or in the case of special status annual plants, to modify Project component location so as to avoid impacts to large populations. If lower numbers of sensitive species are present and would be impacted by the Project than

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

currently estimated, then mitigation requirements would be lowered as well.

Data Request 80

Please provide a plant species list that indicates:

- a. The vegetation community (or communities) in which each plant was detected;
- b. The relative abundance of each plant species detected; and,
- c. Whether the plant's occurrence was localized or widespread. If relative abundance data is unavailable, please estimate using a qualitative scale.

Response:

The vegetation community in which each plant observed during Project survey work was detected is considered irrelevant, as almost all plants recorded are widespread and occur at varying densities in all of these Mojave Desert plant communities. The project description narratives, species list and further plant community description sources referenced in AFC Appendix H are considered sufficient to adequately describe the affected environment.

These narratives are also considered sufficient to adequately describe anticipated impacts to biological resources and to design measures that fully mitigate these potential impacts. The referenced plant community sources do briefly discuss qualitative plant species abundance typically observed in each of the specified plant communities; and Project surveys did not identify any deviation from these cited reference sources.

Data Request 81

Please specify the extent (*i.e.*, distribution and relative abundance) to which exotic species have colonized the Project site (omit areas classified as disturbed/developed).

Response:

Several exotic plant species have become naturalized throughout the Project site, in addition to those disturbed or developed site areas that host a number of additional exotic plants. These naturalized species are primarily Mediterranean or Eurasian forbs and grasses such as Redstem Filaree (*Erodium cicutarium*), Mediterranean Grass (*Schismus barbatus*), Brome (*Bromus*

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

madritensis, *B. diandrus*, *B. tectorum*), Russian Thistle (*Salsola tragus*) and a variety of Mustards.

The latter group of plants, including Sahara Mustard (*Brassica tournifortii*), Tansy Mustard (*Hirschfeldia incana*) and Tumble Mustard (*Sisymbrium altissum*) are more dependent upon annual rainfall and their abundance rises and falls according to the degree of precipitation in any given year. All of these naturalized plants are widely distributed, but are more relatively abundant in soil areas capable of retaining infrequent rainfall or condensation moisture, such as along roads, beneath shrub canopies and on streambanks.

All exotic species identified during Project surveys are listed in Appendix 4 of AFC Appendix H.

Data Request 82

Please specify the degree to which vegetation communities within the Project site have been degraded (omit areas classified as disturbed/developed).

Response:

Vegetation communities within the Project site have all been degraded to various extents by the presence of roads and off-road vehicle trails; exotic vegetation; and previous domestic sheep grazing and military use. Vegetation communities also are degraded in portions of the site that are adjacent to areas where there are human residents.

Data Request 83

For each vertebrate species listed in AFC Appendix 5, please list:

- a. Whether the species was detected onsite or offsite (or both);
- b. the vegetation community (or communities) in which the species was detected;
- c. the relative abundance of the species detected; and
- d. whether the species' occurrence was localized or widespread. If relative abundance data is unavailable, please estimate using a qualitative scale.

Response:

Vertebrate species detected onsite for this Project are discussed in Tables 5-8 and in Sections 6.4 and 6.6 of the BTR (AFC Appendix H), as well as in Appendix 5 of the BTR. Those species

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

detected offsite are also listed in Table 5-8 of the BTR and discussed to a degree in Section 6.4 and 6.6 of the document. Observed species were frequently detected in several of the listed plant communities; with no observations considered atypical use for the involved species.

The specific vegetation community within which each observed species was detected and their relative abundance are not considered necessary for an accurate description of the affected environment; to determine potential Project environmental impacts; or to design measures that fully mitigate identified impacts. Similarly, a determination of whether the occurrence of each observed species is considered widespread or localized is not considered necessary to analyze this Project's potential environmental impacts, due to the highly speculative nature of such an exercise.

Data Request 84

For each special-status vertebrate species listed in the AFC, please indicate whether special-status designation applies year-round or only to a certain part of the species' life history.

Response:

Special status designations for vertebrate species discussed in AFC Appendix H (but not necessarily affected by the Project) are listed in Appendix H, Tables 5 through 8.

Those species where a State designation is applicable less than year-round or limited to certain parts of the species' life history (AFC Appendix H Table 7) include: the state-protected raptor and migratory bird species, Coopers Hawk (*Accipiter cooperi*) [Special Concern designation for nesting]; the migratory bird species, Tri-colored Blackbird (*Agelaius tricolor*) [Special Concern designation for nesting colony]; the State protected raptor and migratory bird species, Swainson's Hawk (*Buteo swainsoni*) [Threatened designation for nesting]; the migratory bird species, Vaux's Swift (*Chaetura vauxi*) [Special Concern designation for nesting]; the State protected raptor and migratory bird species, Northern Harrier (*Circus cyaneus*) [Special Concern designation for nesting]; Yellow Warbler (*Dendroica petechia*) [Special Concern designation for nesting]; Prairie Falcon (*Falco mexicanus*) [Special Concern designation for nesting]; Yellow-breasted Chat (*Icteria virens*) [Special Concern designation for nesting]; and Summer Tanager (*Piranga rubra*) [Special Concern designation for nesting].

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Data Request 85

In order to help determine habitat suitability at the Project site, please provide specific information on how the City determined habitat suitability for each of the special-status species addressed in the AFC. If the City relied on published literature, please provide appropriate references. If habitat suitability indices were calculated, please provide them. If habitat suitability indices were not calculated, please discuss the rationale.

Response:

As discussed in detail in the AFC, the AFC evaluated the Project site's capacity to provide "suitable habitat" for the various special-status species known to occur in the region. This evaluation of habitat suitability was based on: an extensive review of background literature on all potentially affected species, including the voluminous discussion of habitat characterization information incorporated into the West Mojave Plan Amendment to the California Desert Conservation Area Plan (BLM 1998, 2005); recorded occurrence/habitat suitability data provided by the California Natural Diversity Database (CDFG 2005); reported occurrence/habitat characterization data from development projects analyzed in areas near the VV2 Project site; and the professional expertise of several experienced professional biologists who have long-term familiarity with the region's native plants, wildlife and habitats

Published and non-published literature relied on in this effort, as described in AFC Appendix H, includes the following documents:

A Status Review of the Mohave Ground Squirrel (Spermophilus mohavensis). Gustafson, J.R. 1993. Nongame Bird and Mammals Report 93-9. On file, California Department of Fish and Game Office. Sacramento, California.

A Synopsis of the Ecology and Status of the Western Pond Turtle (Clemmys marmorata). D.C. Holland. 1991. Unpublished report prepared for the U.S. Fish and Wildlife Service. On file, National Ecology Research Center, San Simeon Field Station.

Adelanto, Helendale, Hesperia, Victorville and Victorville Northwest Quadrangles RAREFIND Report. California Department of Fish and Game (CDFG). 2003 (for survey design). On file, CDFG State Office, Sacramento, California.

Adelanto, Helendale, Hesperia, Victorville and Victorville Northwest Quadrangles RAREFIND Report. California Department of Fish and Game (CDFG). 2005 (for resource description and impact analysis). On file, CDFG State Office, Sacramento, California.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Amphibian and Reptile Species of Special Concern in California. Jennings, M.R. and M.P. Hayes. 1994. On file, California Department of Fish and Game State Office, Sacramento, California.

Amphibians and Reptiles of Western North America. Stebbins, R.C. 1951. McGraw Hill, New York.

Amphibians and Reptiles of Western North America. Stebbins, R.C. 1951. McGraw Hill, New York.

Birds of Southern California: Status and Distribution. Garret, K. and J. Dunn. 1981. Los Angeles Audubon Society, Los Angeles, California.

California Wildlife Habitat Relationship System. California Department of Fish and Game (CDFG). 2005. On file, CDFG State Office, Sacramento, California.

California's Wildlife. Volume I. Amphibians and Reptiles. Zeiner, D.C., W.F. Laudenslayer, Jr. and K.E. Mayer. 1988. California Wildlife Habitat Relationships System. On file, California Department of Fish and Game State Office, Sacramento, California.

Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service. 1994. Portland, Oregon.

Distribution, Reproductive Success and Impact of Nest Parasitism by Brown-headed Cowbirds on Least Bell's Vireo. Goldwasser, S. 1978. Project Report W-54-R-10, California Department of Fish and Game (CDFG). On file, CDFG State Office, Sacramento, California.

Empidonax traillii extimus: An Endangered Subspecies. Unit, P. 1987. Western Birds 18(3):137-162.

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Southwestern Willow Flycatcher (Empidonax traillii extimus); Final Rule. U.S. Fish and Wildlife Service. 1994. Federal Register, Volume 70, No. 201:60886-61009.

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Arroyo Toad; Final Rule. U.S. Fish and Wildlife Service. 2005. Federal Register, Volume 70, No. 70:19562-19633.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Least Bell's Vireo; Final Rule. U.S. Fish and Wildlife Service. 2004. Federal Register, Volume 59, No. 22:4845-4876.

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Mojave Population of the Desert Tortoise; Final Rule. U.S. Fish and Wildlife Service. 1994. Federal Register, Volume 59, No. 26:5820-5866.

Endangered and Threatened Wildlife and Plants; Final Determinations of Critical Habitat for the California Red-legged Frog; Final Rule. U.S. Fish and Wildlife Service. 1994. Federal Register, Volume 66, No. 49:14626-14674.

Field Guide to Birds of North America (Third Edition). National Geographic Society. 1999. Washington D.C.

Final Environmental Impact Report and Statement for the West Mojave Plan. A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment. U.S. Bureau of Land Management (BLM). 2005. Federal Environmental Impact Statement. On file, BLM California State Office, Sacramento, California; and BLM California Desert Conservation Area District Office, Moreno Valley, California.

Focused Desert Tortoise, Focused Burrowing Owl, and General Biological Survey for the SCLA Specific Plan Amendment and Rail Service Project. Dodson, T. and Associates. 2003.

Unpublished report. On file, City of Victorville Planning Department, Victorville, California.
Horned Lizards: Unique Reptiles of North America. Sherbrooke, W.C. 1981. Southwest Parks and Monuments Association. Globe, Arizona.

Illustrated Flora of the Pacific States, Volumes I-III. Abrams, L. 1923. Stanford University Press. Stanford, California.

Illustrated Flora of the Pacific States, Volumes IV. Abrams, L. 1960. Stanford University Press, Stanford, California.

Initial Study/Mitigated Negative Declaration: Victor Valley Wastewater Reclamation Authority 18 MGD Regional Wastewater Treatment Facility Expansion Project. RBF Consulting. 2005.

Report prepared for the Victor Valley Wastewater Reclamation Authority. On file, AMEC Earth & Environmental, Inc., Riverside Office, California.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Inventory of Rare and Endangered Plants of California (sixth edition). Rare Plant Scientific Advisory Committee, D. Tibor, Convening Editor. 2001. California Native Plant Society (CNPS). Sacramento, California.

Mammals of the Pacific States. Ingles, L.G. 1965. Stanford University Press, Stanford.
Mojave Desert Wildflowers. Mackay, P. 2003. The Globe Pequot Press, Guilford, Connecticut.
Natural History and Decline of Native Ranids in California. Jennings, M.R. 1988. Proceedings of the Conference on California Herpetology, edited by De Lisle, H.F. et al.

Natural Resources Inventory of the Mojave River Corridor. Tierra Madre Consultants. 1992. Unpublished report prepared for the Mojave River Corridor Task Force for the City of Victorville Parks and Recreation Department. On file, AMEC Earth & Environmental, Inc., Riverside Office, California.

Recovery Plan for the California Red-legged Frog (Rana aurora draytoni). U.S. Fish and Wildlife Service. 2002. Portland, Oregon.

Surface Activity, Movement, and Home Range of the San Diego Horned Lizard, Phrynosoma coronatum blainvillei. Hagar, S.B. 1992. Master's Thesis, California State University, Fullerton.

The Distribution of the Birds of California. Grinnel, J. and A.H. Miller. 1944. Cooper Ornithological Club. Berkeley, California (186 reprint Artemisia Press, Lee Vining, California).

The Jepson Manual: Higher Plants of California. University of California Press, Berkeley, California.

The Mammals of North America. Hall, E.R. 1981. John Wiley and Sons, New York.
Updated General Biological Survey and Focused Desert Tortoise (Gopherus agassizii) Survey for Victor Valley Wastewater Reclamation Authority's Proposed Wastewater Treatment Facility Expansion Project. Dodson, T. and Associates. 2005. Unpublished report. On file, City of Victorville Planning Department, Victorville, California.

West Mojave Plan Species Accounts. U.S. Bureau of Land Management (BLM). 1998. Unpublished report and appendix to the Final Environmental Impact Report and Statement for the West Mojave Plan (BLM 2005). On file, BLM California State Office, Sacramento, California; and BLM California Desert Conservation Area District Office, Moreno Valley, California.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

No habitat suitability indices were calculated in preparing the VV2 Project BTR, as this is not commonly done for habitat assessments conducted in the region. In concert with a review of the pertinent literature listed above, the professional expertise of involved biologists was considered sufficient to ascertain the suitability of surveyed habitats for identified special status species.

Data Request 86

Please detail the methodology of surveys the City conducted for the project, and detail any alterations to proposed mitigation that could be necessary if surveys resulted in lower estimates of abundance than the site's actual abundance.

Response:

Survey methodologies are detailed in the BTR (AFC Appendix H), Section 5.2. Alterations to proposed mitigation would not be necessary if special status species abundance is higher than initially estimated, as appropriate mitigation measures have been included to address this possibility. If the amount of impact to special status species is lower than certainly estimated, the amount of proposed mitigation would be lowered accordingly.

Data Request 87

Please specify the number of Joshua trees and native cacti that the City expects would be directly impacted in the Project area.

Response:

Joshua trees and cacti are sparsely distributed throughout the VV2 Project plant site. Several hundred Joshua trees and cacti will be directly impacted. As noted in Section 6.4.1.3 of the AFC, City of Victorville Municipal Code Title 13, Section 13.33, requires that prior to submitting an application for a grading permit, the Project will need to conduct an inventory of Joshua trees, develop a plan for their disposition (relocate on-site, relocate off-site, put trees up for adoption) and that the City will conduct an inspection. The Project's conceptual landscaping plan (provided in the response to CEC Data Request 91 submitted on June 23, 2007), indicates that Joshua trees from the site interior will be utilized for landscaping along the site access road and around the Project's administration building and parking lot. Joshua trees and cacti also will be addressed in the VV2 Project Revegetation Plan, which will be completed and provided for agency review prior to Project construction.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Data Request 88

Please specify the botanical survey methods the City would use to ensure thorough coverage of impact areas.

Response:

Botanical surveys employed to ensure thorough coverage of impact areas would involve qualified personnel using narrow (15-20 feet width) pedestrian belt transects across the affected areas, with Global Positioning System (GPS) equipment used to document plant locations. Each documented plant subsequently would be marked with red flagging.

Data Request 89

Please discuss any additional oversight and/or protective measures (*e.g.*, watering) the City would take to ensure that transplanted special-status plant species survive transplant and thrive over time.

Response:

Oversight measures to be taken in transplanting this vegetation would include the use of a mechanical tree spade for excavation work; root-ball bundling/protection following excavation; the use of vitamin B-1/root hormone in initial root-ball soaking; water well creation and initial watering at the destination site; and immediate planting. Further watering of transplants would be prescribed if determined necessary at monthly intervals for six months. Transplanted tree and cacti survival needs would be integrated with landscaping plans for the facility. Trees not surviving the six-month establishment period would be replaced with Joshua trees removed from other sources in the Project vicinity, if available.

Data Request 90

Please specify if a monitoring plan would be implemented to track survivorship of transplanted plants. If monitoring would occur, please specify the duration.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Response:

Plant establishment following transplantation efforts would be monitored monthly using standard inspection practices, for a period of six months.

Data Request 91

Please list any studies that have documented the successfulness of transplanting the special-status plant species that would (or may) be impacted by the Project.

Response:

Few published studies have thoroughly documented the survival of transplanted cacti and Joshua trees in the Mojave Desert. Based on "gray" literature and field experience documented in numerous sources, cacti usually fare well in most such efforts. However, Joshua tree transplantation success is known to vary considerably among different projects.

Experience gleaned from a number of development projects in the Victorville vicinity indicate that survival rates can range from 50-90 percent, depending on the tree removal method/length of extricated tree storage; transplant timing; overall tree/cacti age and health; as well as transplant destination site conditions. Such local projects include the Caltrans Highway 138 Segment 10 Revegetation/Joshua Tree Transplant Project 2006-07 and Caltrans Highway 138 Segment 11 Revegetation/Joshua Tree Transplant Project 2007; (AMEC provided oversight for both of these projects). In the past three years, there also have been numerous (more than 10) housing development projects by firms such as Frontier Homes, Forecast Homes, and Tandis Homes in the Victorville area where Joshua tree transplantation occurred.

Experience indicates that small (less than 5 feet in height) trees rarely transplant well; nor do multi-branched large trees; trees with extensive trunk damage; transplanted trees involving destination sites with excessively rocky conditions; or transplantation in summer months. A full discussion of transplantation success in previous efforts and options prescribed to enhance survival rates for Joshua Trees will be included in the VV2 Revegetation Plan to be prepared for this Project. A few references for such transplantation work are outlined below.

Bainbridge, D. (ed.). 1995. A Beginners Guide To Desert Restoration. U.S. Department of the Interior, National Park Service, Denver Service Center.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Franson, R.L. and G. Bernath. 1993. *Health of plants and soil salvaged for revegetation at a Mojave Desert gold mine*. Presentation abstract Eighth Wildland Shrub Symposium Arid Land Restoration. October 19-21, 1993. Las Vegas, Nevada.

Haley, J. and D. Bainbridge. 1999. *Desert restoration: Do something or wait a thousand years*. Presentation abstracts, Mojave Desert Science Symposium, February 25-27, 1999.

San Bernardino County Department of Agriculture. 1988. Joshua tree transplanting. Recommended procedures issued by the County Agricultural Commissioner.

University of Arizona Cooperative Extension. 2001. Cactus, Agave, Yucca and Ocotillo. Cooperative Extension, College of Agriculture and Life Sciences, University of Arizona, Tucson.

Data Request 92

Please specify any additional mitigation that would be enacted if transplanted plants would die.

Response:

Joshua trees not surviving the six month-length plant establishment period would be replaced with Joshua trees obtained from other locations in the Project vicinity

Data Request 93

Please clarify the extent to which the Project is expected to lower the water table of the Mojave River.

Response:

With the exception of rare occasions when the emergency backup cooling water supply source is needed (the City of Victorville's system, which relies on wells) and the very small amount of potable water needed to supply the Project's operational work force (a total of approximately 35 people), the Project will not utilize groundwater. The VVWRA can supply reclaimed water to the VV2 Project while maintaining its obligations (as established in a Memorandum of Understanding with CDFG) for discharge to the Mojave River. The Project therefore is not expected to lower the water table of the Mojave River.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Data Request 94

Please provide any studies that were conducted to assess the potential effect of the Project on the water table of the Mojave River.

Response:

The MOU between the VVWRA and CDFG established the required discharge volumes by VVWRA to the Mojave River to ensure appropriate protection of the water and riparian resources involved. The Project will not affect the VVWRA's ability to meet the required discharge levels because the VVWRA will only supply water to the Project that is "surplus" to the volumes required to meet its MOU requirements. Thus, no VV2 Project-specific studies were needed and none were conducted.

Data Request 95

Please indicate whether critical habitat for either the desert tortoise or the southwestern willow flycatcher would be exposed to Project emissions. If so, please discuss the ambient concentrations for each pollutant at the respective critical habitat boundaries and any measures that would be taken to mitigate such impacts to critical habitat.

Response:

AFC Appendix H Section 7.3.3 and the May 2, 2007 Biological Assessment acknowledged and discussed that biological resources located immediately adjacent to the Project may be indirectly impacted to varying degrees by human activity, human-subsidized scavenger use, ambient night lighting, noise, increases in fugitive dust, etc.

While the Project site is situated three miles south of designated critical habitat for the Desert Tortoise and portions of transmission line segments are situated 150 feet from critical habitat for the Southwestern Willow Flycatcher; neither critical habitat is anticipated to be affected by exposure to dust, smoke or chemical emissions associated with the Project. While emissions may be generated by Project construction or operational activities in certain portions of the affected area, no significant impacts are expected to the subject critical habitats.

Noise was addressed as an indirect impact in Section 7.3.3 of AFC Appendix H that could potentially affect species (including the endangered Southwestern willow flycatcher) using riparian habitats when construction work occurs in portions of transmission line Segments 1 and 2.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Mitigation measures have been included in AFC Appendix H and the Biological Assessment relative to addressing potential noise impacts on individual birds that might utilize Mojave River riparian habitats (such as the Southwestern willow flycatcher) occurring adjacent to active construction work areas. However, noise generated by the Project would not affect any designated critical habitat.

Data Request 96

Please specify any potential indirect impacts the Project would have on critical habitat. Discuss the potential severity of these impacts, any monitoring that would be conducted, and mitigation measures designed to minimize such impacts.

Response:

AFC Appendix H Section 7.3.3 and the May 2, 2007 Biological Assessment acknowledged and discussed that biological resources located immediately adjacent to the Project may be indirectly impacted to varying degrees by human activity, human-subsidized scavenger use, ambient night lighting, noise, increases in fugitive dust, etc.

Critical habitat areas designated for the desert tortoise and Southwestern willow flycatcher, or any other species, are not anticipated to be affected by Project emissions or any indirect impacts. Because no significant impacts are expected, no mitigation measures have not been proposed.

Data Request 97

Please specify any additional measures the City would take to ensure the establishment of native plant species in the restoration of temporarily disturbed areas.

Response:

Revegetation success criteria for temporary disturbance areas will be specified in the Revegetation Plan prepared for the VV2 Project. This plan will include a prescription for watering Joshua tree and cacti transplants at monthly intervals for six months, should this need be identified through monthly monitoring prescribed to occur through the six-month plant establishment period. Joshua trees not surviving this identified establishment period would be replaced with Joshua trees removed from other locations in the vicinity, if available.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Data Request 98

Please indicate whether the City would implement a noxious weed prevention program. If so, please provide a copy of the program or cite the established protocol the City would use.

Response:

While soil disturbance can encourage the proliferation of invasive and exotic plant species, including designated noxious weeds, there are no formally designated noxious plant species known to occur in the immediate affected area of the Project site. A shift in a vegetation community from native to exotic can also have adverse effects on habitat for native wildlife, including the desert tortoise. However, the affected area already supports native and non-native invasive species to varying degrees and the Project is not anticipated to shift the vegetation community from a native plant community to an exotic one. A small degree of disturbed soil stabilization by invasive native/non-native plants in temporary disturbance areas would be expected with the Project, but planned revegetation/reclamation activities would minimize this occurrence.

Further, the Revegetation Plan to be prepared for the VV2 Project will be designed to facilitate the reestablishment of existing native species to the degree feasible; avoiding techniques and actions that could encourage the establishment or spread of non-native plants. Best management construction practices (e.g., washing of equipment prior to use in the Project area, staging activities limited to designated zones) generally employed during construction activities would limit the potential for spreading noxious weeds into the Project area. The VV2 Project Revegetation Plan will indicate the need for these best management construction practices. The VV2 Project Revegetation Plan and the associated monthly monitoring of all treatment areas during the plant establishment period will also include a noxious weed identification component as well as a control component in order to ensure that no noxious weeds are spread to adjacent lands as a result of Project construction work. Any designated noxious weed identified in the affected area during monthly monitoring surveys during the six month-length plant establishment period would be manually removed/disposed of appropriately.

Data Request 99

Please specify whether proposed translocation efforts would adhere to the recovery plan's *Guidelines for Translocation of Desert Tortoises*.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Response:

Several translocation actions have been completed since the original recovery plan for this species was prepared and considerable new information has been generated relative to ensuring successful translocations. This recovery plan is also currently in revision and is expected to be re-issued shortly. The Project's desert tortoise translocation efforts will adhere to the Desert Tortoise Recovery Plan's Appendix B, *Guidelines for Translocation of Desert Tortoise* (USFWS 1994); as modified by any upcoming revision of the Recovery Plan and terms/conditions specified in the Biological Opinion issued for the Project by the USFWS per the Endangered Species Act Section 7 consultation process.

Data Request 100

Please indicate how "impacts to both translocated tortoises and receiving population tortoises" would be "fully analyzed and mitigated."

Response:

Potential impacts to both translocated tortoises and receiving tortoise populations will be fully analyzed in the Biological Opinion to be issued by the USFWS, per the Endangered Species Act Section 7 consultation process.

Potential impacts will be mitigated according to the terms and conditions specified in this binding regulatory document, which is anticipated to encompass measures outlined in the Desert Tortoise Recovery Plan's Appendix B: *Guidelines for Translocation of Desert Tortoises*. These terms and conditions, as well as on-the-ground measures to be employed for their fulfillment, will be discussed at length in the Desert Tortoise Translocation Plan to be prepared for the Project as part of the USFWS Section 7 Biological Opinion.

Data Request 101

Please provide information on possible relocation areas, including the City's criteria for selecting such sites.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Response:

Possible relocation areas include public and private lands situated outside of designated critical habitat in the western Mojave Desert. Criteria for site selection will be based on the degree to which these possible relocation lands fulfill the primary intent of translocation -- relocation of animals to a locality where they can survive, thrive and reproduce in the wild.

These criteria will also focus on integration into regional land use planning objectives indicated in the West Mojave Plan, as well as the extent such lands provide for other special status species. Principles outlined in the document *Anthropogenic Degradation of the Southern California Desert Ecosystem and Prospects for Natural Recovery and Restoration* (Lovich and Bainbridge 1999) will also be taken into consideration in determining the suitability of a possible relocation area.

Data Request 102

Please specify how desert tortoise habitat suitability would be evaluated for potential relocation sites, and how habitat suitability at potential relocation sites compares to the Project site.

Response:

Desert tortoise habitat suitability of potential relocation sites would be evaluated through the consideration of plant communities occurring on the property; the degree of onsite surface disturbance; historic desert tortoise density/habitat quality information from the surrounding vicinity, as characterized in the Desert Tortoise Recovery Plan and West Mojave Plan Amendment to the California Desert Conservation Area Plan (BLM 2005); as well as other pertinent BLM and USFWS documents on file. Habitat suitability at potential relocation sites is expected to be similar to that occurring at the Project site or of higher habitat quality.

Data Request 103

Please specify any habitat enhancement or management actions that would be taken to ensure the fitness of individuals and the viability of the local population at the relocation site. Please include a discussion on how introduction of additional tortoises would affect carrying capacity.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Response:

Initial health screening is planned of desert tortoises to be moved; as is fencing to eliminate animal travel away from the translocation site and possible relocation site property fencing to eliminate off road vehicle use impacts to translocated animals. Desert tortoise monitoring is also planned for one year. This will include a radio telemetry study of translocated animals if so prescribed in the USFWS Biological Opinion. The introduction of a small number of desert tortoises to a particular parcel is unlikely to substantially affect its carrying capacity. Not only is this species an integral part of this ecosystem, but desert tortoise population density in almost the entire region is considered far below historical levels and suitable habitat carrying capacities.

Data Request 104

Please outline the scientific information that would be relied upon to minimize possibility of take when capturing, handling, and translocating desert tortoises.

Response:

Take cannot be avoided when handling and translocating desert tortoises, which is one reason why an incidental take permit is being obtained for the Project through the ESA Section 7 process. Terms and conditions in the resulting Biological Opinion will specify handling/translocation procedures as well as an incidental take allowance, based on scientific data in the initial listing desert tortoise decision documentation, the recovery plan prepared for the species, and USFWS files.

In addition, the document, "*Field Survey Protocol for any Federal and Non-federal Action that May Occur within the Range of the Desert Tortoise*" (U.S. Fish and Wildlife Service 1992) will be used to guide affected area clearance survey work. The document, "*Guidelines for Handling Desert Tortoises during Construction Projects*" prepared by The Desert Tortoise Council (1994; revised 1999) will also be relied on in handling desert tortoises to ensure that animal harm is minimized. Other scientific information that will be relied on include:

Evaluation of Evidence Supporting the Effectiveness of Desert Tortoise Recovery Actions
(Boarman and Kristan 2006; Scientific Investigations Report 2006-5143)

Effects of Climatic Variation on Field Metabolism and Water Relations of Desert Tortoises
(Henen *et al.* 1998);

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Desert Tortoise Nest Relocation (Science Applications International Corporation 1999);

Translocation as a Tool for Conservation of the Desert Tortoise (Nussear et al.);

Health and Condition Index of Relocated Tortoises: Feasibility of Relocating Tortoises as a Successful Mitigation Tool (Musser and Ross 1996);

Spring, Fall, or Winter? Success of Desert Tortoise Translocation as Affected by Season of Release (Field et al. 2003);

Desert Tortoise Translocation Plan for Fort Irwin's Land Expansion Program at the U.S. Army National Training Center (NTC) & Fort Irwin (Esque et al. 2005);

Clark County Desert Conservation Program Draft Environmental Assessment Desert Tortoise Translocation (Forensic Analytical Specialities, Inc. and Aztec Environmental Consulting 2005);

Predator-proof Field Enclosures for Enhancing Hatching Success and Survivorship of Juvenile Tortoises: A Critical Evaluation (Morafka et al. 1997);

Guidelines for the Field Evaluation of Desert Tortoise Health and Disease (Berry and Christopher 2001);

Seroepidemiology of Upper Respiratory Tract Disease in the Desert Tortoise in the Western Mojave Desert of California (Brown et al. 1999);

Pathology of Diseases in Wild Desert Tortoises from California" (Homer et al. 1998); "*Desert Tortoises: Adoption and Care*" (Tortoise Group 1999); and

18 Years of Change in Protected and Unprotected Desert Tortoise Populations at the Interpretive Center (Berry et al. 1999).

Data Request 105

Please describe how essential tortoise behavior patterns (e.g., breeding, feeding, or sheltering) would be monitored at translocation sites so as to avoid take.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Response:

Essential desert tortoise behavior patterns would be monitored at translocation sites through indirect means involving pedestrian survey and observation from a distance, unless the Biological Opinion issued for the VV2 Project prescribes the use of radio telemetry and animal handling for monitoring purposes.

Data Request 106

Please show that cumulative impacts to the desert tortoise would be mitigated.

Response:

Acquisition of habitat compensation lands within an area regionally identified by the West Mojave Plan Amendment of the California Desert Conservation Area Plan (BLM 2005) for long-term management of desert tortoise, as well as translocation of desert tortoises from an area of rapid surrounding development to a permanent reserve area, both will serve to mitigate cumulative impacts to the species.

Data Request 107

Please provide a citation for the in-text reference *Desert Tortoise Council 1999* or provide a copy of the document.

Response:

Desert Tortoise Council 1994 (revised 1999). *Guidelines for handling desert tortoises during construction projects*. Edward LaRue (ed). Desert Tortoise Council. Beaumont, California.

Data Request 108

Please specify the impacts fugitive dust may have on plants.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Response:

Annual plant germination of some plant species can be reduced at least minimally by dust settlement upon surface soils, though the germination of certain other plants is also enhanced by such dust settlement. The overall growth extent of some affected plants after germination can occasionally be decreased, as photosynthetic leaf area and associated capability is reduced, at least in severe cases of dust settlement. Overall growth of annual plants subject to minor dust settlement is not known to be substantially decreased.

Data Request 109

Please specify the impacts fugitive dust may have on food sources for the desert tortoise.

Response:

Annual plants comprise a large percentage of desert tortoise diet and AFC Appendix H, as well as the Biological Assessment, note that fugitive dust generated by Project construction may decrease annual plant germination rates. However, severe dust settlement completely preventing annual plant germination is not expected because the air quality analysis showed minimal impacts.

Similarly, large amounts of dust could decrease the overall growth extent of some desert tortoise forage plants, but minor dusting of such plants is unlikely to substantially alter vegetative growth rates. Vegetation coated with a substantial amount of dust is unlikely to be selected as a preferred forage item by herbivores such as the desert tortoise. However, minor dust settlement upon annual plant leaf surfaces is unlikely to deter tortoise selection/foraging.

Fugitive dust relative to most small-scale actions involving heavy machinery and construction actions, such as that anticipated with the VV2 Project, is unlikely to be generated in massive amounts, nor is such construction work expected to result in extensive offsite drift.

Data Request 110

Please discuss how any project-related reduction in desert tortoise food will be mitigated.

Response:

Although the Project is anticipated to generate minor fugitive dust emission, this localized and short-term impact would not be expected to extend beyond the immediate periphery of the active

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

construction area. Overall germination rates for some plants and growth of affected vegetation in these peripheral areas may be slightly diminished. Therefore, adverse impacts on offsite desert tortoise forage are expected to be minimal. Accordingly, no mitigation for offsite Project-related desert tortoise food reductions has been recommended beyond that required to ensure compliance with air quality standards and regulations.

Data Request 111

Please provide documentation showing that the proposed mitigation will conserve the Mohave ground squirrel and not illegally jeopardize its continued existence.

Response:

Although VV2 Project MGS trapping surveys in 2006 did not identify any MGS, the Applicant has opted to assume species presence and initiate California Endangered Species Act (CESA) Section 2081 incidental take permitting for this State-listed Threatened species. The resulting incidental take permit will include binding mitigation and monitoring measures designed to ensure that the Project will not jeopardize the species' continued existence.

Data Request 112

Please specify how off-site habitat compensation will conserve this species.

Response:

Off-site habitat compensation for the Project will be included in regional planning, where numerous other projects and activities are also required to generate similar compensation lands and provide long-term monetary endowments necessary to manage a recovery-dedicated reserve. This regional planning will secure a land base that is managed appropriately and will be sufficient to meet long-term habitat persistence needs for MGS. When suitable habitat for a species is secured; associated appropriate habitat management implemented; and measures instituted to minimize other projects' harm to this species and to contribute to long-term habitat/species persistence, the conservation of a species has the best chance of success.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Data Request 113

Please indicate how off-site habitat compensation will be connected with core population areas.

Response:

Habitat lands tentatively identified to fulfill impact compensation requirements are situated within or adjacent to MGS core population areas and "crucial habitats" identified by CDFG.

Data Request 114

Please provide a scientifically-defensible program that shows how the proposed mitigation strategy centering around translocation would conserve burrowing owls.

Response:

Burrowing owl relocation is desirable when nesting habitat is immediately threatened by development (The California Burrowing Owl Consortium 1997, TNC 1999, Trulio 1995). Harris and Feeney (1990) provide information on the successful relocation from a construction site to an enhanced site on an unused portion of a municipal golf course in central California (TNC 1999). Relocation has also been partially successful where owls were moved a long distance at the beginning of the breeding season (Delevoryas 1997).

Currently, no nesting burrowing owls or actively occupied burrows have been identified on the Project site. If burrowing owl relocation becomes necessary, all appropriate permitting and a specific burrowing owl relocation plan will be prepared according to CDFG guidelines, which are based on a scientifically defensible program.

CDFG (1995) have previously recommended compensation for the direct loss of burrowing owl nesting/foraging habitat at established (varying) ratios, as well as passive relocation of all owls associated with active burrows. For the VV2 Project, CDFG has also categorically stated (11/27/2006 Letter to Stephen Myers, AMEC Earth & Environmental) that:

"All owls associated with occupied burrows, that will be directly impacted (temporarily or permanently) by the project, shall be passively relocated and the following measures shall be implemented to avoid take of owls:

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

-
- a) *Occupied burrows shall not be disturbed during the nesting season of February 1 through August 31, unless a qualified biologist can verify through non-invasive methods that either the owls have not begun egg laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent flight.*

 - b) *Owls must be relocated by a qualified, permitted biologist from any occupied burrows that will be impacted by project activities. Once the biologist has confirmed that the owls have left the burrow, burrows shall be evaluated using hand tools and refilled to prevent reoccupation.*

 - c) *All relocation shall be approved by the Department. The permitted biologist shall monitor the relocated owls a minimum of three days per week for a minimum of three weeks. A report summarizing the results of the relocation and monitoring shall be submitted to the Department within 30 days following completion of the translocation and monitoring of the owls" (CDFG 2006).*

Other studies reviewed and analyzed for the Project on burrowing owl relocation include the following:

California Department of Fish and Game (CDFG). 1995. *Staff report on burrowing owl mitigation. Bishop (Inland Deserts) Field Office. On file, CDFG State Office, Sacramento, California.*

Delevoryas, P. 1997. *Relocation of burrowing owls during the courtship period.* Pages 132-137 in J.L. Lincer and K. Steenhof, editors, "*The Burrowing Owl: its Biology and Management*". Raptor Research Report No. 9. Raptor Research Foundation.

Harris, R.D. and L. Feeney. 1990. *Restoration of habitats for burrowing owls (ATHENE CUNICULARIA).* Proc. Ann. Meet. Soc. Ecol. Restor. 1:251-259.

The California Burrowing Owl Consortium. 1997. *Burrowing owl survey protocol and mitigation guidelines.* J. Raptor Res. Report 9:171-177.

The Nature Conservancy (TNC). 1999. *Western burrowing owl (Athene cunicularia hypugaea).* On file, TNC, Arlington, Virginia.

Trulio, L.A. 1995. *Passive relocation: a method to preserve burrowing owls on disturbed sites.* J. Field Ornithol. 66(1):99-106.

**VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2**

Technical Area: Biological Resources

Response Date: August 29, 2007

Data Request 115

Please define success criteria for the burrowing owl translocation program, describe any monitoring that would occur, and the management techniques that would be used.

Response:

A burrowing owl translocation program may or may not be necessary, based on biological resource survey results thus far collected for the Project. Similarly, defining success criteria for a translocation program may or may not be required by the CDFG or the CEC. If required, translocation success criteria would be defined and involve assessing the degree of site tenacity exhibited by relocated burrowing owls to their final translocation site; as well as by gauging the avoidance of potential harm to individual owl(s) incurred by moving the affected owl(s) out of potential construction impact areas.

Monitoring of translocated owls would proceed as required by CDFG and the CEC. Management of the burrowing owl translocation process and techniques used therein would follow guidance set by the California Burrowing Owl Consortium, as well as direction provided by CDFG.

Data Request 116

Please discuss material to be provided in the annual report submitted to the CDFG, and the years in which a report would be submitted.

Response:

Submittal to CDFG of monthly and/or annual reports may be required under CESA Section 2081 and Protected Species Incidental Take Permit Mitigation, Monitoring and Reporting Program (MMRP) requirements. Reported material generally includes the specific mitigation measure applied during that monitoring period applicable to any special status species; the source of that mitigation measure; the date or project phase when each required mitigation measure was implemented; the responsible party who carried out that mitigation measure; and the status, date and initials that identify the implementation status of each mitigation measure, the date that status was determined, and the initials of the person determining the status. Monthly monitoring reports would be submitted to CDFG during all months of active construction work where an impact occurs to the desert tortoise, MGS or burrowing owl. Similarly, an annual monitoring report would be submitted for the year(s) in which active construction occurs, per standard CESA Section 2081 incidental take permit requirements.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Data Request 117

Please provide a detailed, scientifically based plan for nesting bird surveys.

Response:

Surveys using pedestrian belt transects 15-30 feet wide would be conducted across the length and breadth of the affected property. Such small width transects allow for an absolute census count of active nests in relatively open desert plant communities when qualified personnel familiar with bird species/nests common to these habitats conduct these surveys.

Emlen (1956, 1977) and Eberhardt (1978a) provide a discussion about the scientific merits of various types of avian transect methods, absolute census counts and estimates. Full references are:

Eberhardt, L.L. 1978a. *Transect methods for population studies*. J. Wildl. Manage. 42(1):1-31.
Emlen, J.T. Jr. 1956. *A method for describing and comparing avian habitats*. Ibis 98(4):565-576.

Emlen, J.T. 1977. *Estimating breeding season bird densities from transect counts*. Auk 94(3):455-468.

Data Request 118

Please provide the specific methods the City would use for its nesting bird surveys.

Response:

Surveys using pedestrian belt transects 15-30 feet wide across the length and breadth of the affected property would be used to detect nesting birds and active nests.

Data Request 119

Please list and discuss the criteria the City would use to ensure nests are not disturbed or destroyed by pre-construction and/or construction activities.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Response:

Surveys using pedestrian belt transects 15-30 feet wide across the length and breadth of the affected property would be conducted by qualified personnel familiar with bird species/nests common to these habitats. Absolute census count nest surveys can be accomplished in open desert plant communities without disturbing nesting birds unduly.

Biological resource surveying personnel would map and report any detected nest activity to Project construction management personnel and provide recommendations for avoiding pre-construction and construction impacts. In most instances, impact avoidance measures would include establishing a suitable width work exclusion buffer zone; with a monitor stationed to determine the efficacy of such mitigation. In other instances, all work in the immediate vicinity of the identified active nest would be postponed for the duration of nesting activity, until such time as the juvenile birds have fledged. The City would rely on the expertise and recommendations of qualified biological resource surveyors to ensure nests are not disturbed by the subject surveys; or destroyed by pre-construction/construction activities.

Data Request 120

Please describe preventive and/or avoidance measures the City would employ to ensure no migratory bird eggs or fledglings are disturbed or injured by pre-construction or construction activities.

Response:

The City would rely on the expertise and recommendations of qualified biological resource surveyors to ensure nests are not disturbed by the pre-construction avian nesting clearance surveys; or destroyed by pre-construction/construction activities.

Data Request 121

Please discuss the methods the City would use to minimize surveyor-induced predation.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Response:

The City would rely on the expertise and recommendations of qualified biological resource surveyors to ensure that pre-construction clearance surveys would not result in surveyor-induced predation.

Data Request 122

Please discuss the methods the City would use to minimize surveyor-induced nest disturbance and/or abandonment.

Response:

The City would rely on the expertise and recommendations of qualified biological resource surveyors to minimize surveyor-induced disturbance and/or abandonment by the subject pre-construction avian nesting surveys; or destruction by pre-construction/construction activities.

Data Request 123

Please clarify when monitors would be located in the Mojave River corridor.

Response:

All Project construction activities occurring in close proximity to the Mojave River will involve biological monitoring. The intent of this biological monitoring is to ensure that all birds nesting in the adjacent riparian habitat are not disturbed by construction activities; to guard against potential impact situations involving other vertebrate species; and to provide recommendations for avoiding and/or mitigating such impacts, should they be identified. Should probable nesting disturbance be identified within a portion of construction work area, an appropriately-sized non-work buffer zone would be established to prevent potential impacts. These buffer areas would be based on the professional expertise of qualified biologists and would be applicable for the duration of the identified nesting activities/species' risk situation.

Data Request 124

Please clarify the species (or guilds of species) that would be monitored.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Response:

The intent of prescribed biological monitoring in the limited construction areas occurring adjacent to the Mojave River is to ensure that all birds nesting in the adjacent riparian habitat are not disturbed by construction activities; to guard against potential impact situations involving other vertebrate species; and to provide recommendations for avoiding and/or mitigating such impacts, should they be identified.

Data Request 125

Please indicate what, if any, actions the City would take in response to monitoring reports indicating impacts to biological resources in the Mojave River corridor.

Response:

Should probable nesting disturbance or potential impacts to other vertebrate species be identified in the Mojave River corridor, an appropriately-sized non-work buffer zone would be established. These buffer areas would be based on the professional expertise of qualified biologists and would be applicable for the duration of identified nesting time period (until young of the year have fledged) or until the identified species risk situation was no longer present.

Data Request 126

Please provide additional information on the presence of fourwing saltbush within the Project site, including its abundance, geographic location(s), and physical characteristics.

Response:

Fourwing Saltbush (*Atriplex canescens canescens*) is a densely branched shrub widely distributed throughout the Mojave Desert to Washington, South Dakota, Kansas and Mexico (Mackay 2003). This rounded shrub species is supported by sessile, narrow and linear leaves having a mealy texture. This dioeciously-reproducing plant flowers in June through August, producing large quantities of a four-winged, stalked fruit containing seed. In general, larger stands of closely spaced, large Fourwing Saltbush which form uniform habitat patches are absent from the immediate Project site, though they do occur with frequency in the adjacent Mojave River. The small stands of widely spaced small shrubs occurring within the Project site are primarily an

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

infrequent component of the Project site's Creosote Bush Scrub and Saltbush Scrub plant communities, rather than the larger, uniform habitat patches that occur in the adjacent Mojave River.

Data Request 127

Please describe the methods that would be used in proposed clearance surveys conducted for the San Diego coast horned lizard.

Response:

Surveys of pedestrian belt transects 10 feet wide would be conducted during pre-construction surveys within habitat considered suitable for the San Diego Coast Horned Lizard. Lizards located would be relocated out of harm's way into adjacent suitable habitat.

Data Request 128

Please specify at what point in Project development the City would implement common raven control programs for both Project construction and operation.

Response:

A Common Raven Control Plan will be completed for the Project 90 days prior to ground-disturbing activity, subject to regulatory agency approvals, which will be in force concurrent with the initiation of preconstruction staging and equipment storage activities. This plan will address the power plant site and laydown areas, as well as all Project linear features.

The City will work with the CEC, USFWS and CDFG to develop appropriate response procedures when active common raven nests are located on facility/utility feature structures, as one of the primary components of this plan. Other components will include monitoring the facility and utility features on a regular scheduled basis in order to identify Common Raven nests in a timely fashion; removal of inactive common raven nests from such areas; appropriate trash removal during the construction time period; and debris disposal direction for day-to-day operations. This Common Raven Control Plan will be applicable for the life of the Project.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Data Request 129

Please specify whether the plans referred to above would include proactive efforts to locate common raven nests at the Project site.

Response:

Yes, the Common Raven Control Plan referred to above would include proactive efforts to locate Common Raven nests at the Project site.

Data Request 130

Please clarify whether the proposed raven control program would apply to the Project's linear features.

Response:

Yes, the Common Raven Control Plan referred to above would apply to the Project's linear features.

Data Request 131

Please discuss the rationale for, and effectiveness of, common raven nest removal during the non-breeding season.

Response:

Nest-site tenacity is fairly strong for Common Ravens in the Mojave Desert; a situation which compels individual birds to return annually in February-March of the year to locales supporting familiar, intact nests. Some of these nesting birds are known to feed their young hatchling and juvenile desert tortoises, as well as the young of other wildlife.

Common Ravens are known to favor upright structures of varying heights for nesting and roosting, particularly artificial structures placed in open desert habitats in proximity to water, food and/or shading resources. Once nests are constructed in such structures, they occasionally deteriorate during the year and require minor rebuilding/retrofitting by the occupying Common Raven, prior to or during their use as an active nest. However, instances where these nests have

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

repeatedly been removed in whole from a specific site during the inactive nesting season appear to be avoided by Common Ravens in their returning nest pursuits.

Direct control and/or active nest removal of this designated migratory bird requires a specific depredation permit from the USFWS and appropriate, agency-approved treatment of any affected birds; whereas removal of unoccupied nests in the inactive nesting season does not. Therefore, the inactive nesting season removal of unoccupied Common Raven nests constructed in Project infrastructure would not require the acquisition of a depredation permit or specialized bird handling techniques, and avoids potential nesting impacts on wildlife occurring adjacent to the Project area.

Data Request 132

Please provide project-specific mitigation measures or management practices that would reduce impacts from:

- a. ambient light;
- b. noise;
- c. hazardous material runoff; and
- d. human activity on biological resources.

Response:

Project-specific mitigation measures designed to reduce impacts from the above factors are detailed in Section 8.0 of the BTR, AFC Appendix H.

Data Request 133

Please describe the material that would be presented in the environmental awareness and project approval compliance training, and how Project personnel would be monitored to ensure compliance with material presented in the training session.

Response:

The Worker Environmental Awareness Program (WEAP) has not yet been designed for the VV2 Project. It is expected that developing such a program will be part of the Project's CEC Conditions of Certification and that the program will be submitted to the CEC Compliance Project Manager for review and approval. The biological resources portion of the WEAP

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

training will be developed by or in consultation with the Project's designated Biological Resources specialist. It will include a training session (with supporting written materials) at which attendance is mandatory for all Project employees (including construction contractors and subcontractors who work on the Project site). The WEAP will discuss the locations and types of sensitive biological resources that may be encountered, explain the reasons that these resources must be protected, identify and explain the various habitat protection measures (temporary and permanent) that are included in the Project and how they are to be implemented, and identify whom to contact for additional information if needed.

Compliance with environmental requirements will be a contractual requirement for firms who are selected as Project contractors and subcontractors during construction and/or operations. Each worker (direct Project employee or contractor employee) will be required to sign a training acknowledgment form indicating that they have received training and agree to abide by the WEAP requirements. The Project will keep these training acknowledgment forms on file. During both construction and operations phases, there will be designated Project personnel who are responsible for compliance with environmental (and other) Conditions of Certification. These responsibilities will include overseeing compliance with WEAP requirements by Project workers.

Data Request 134

Please discuss the corrective measures that would be taken if Project personnel do not comply with environmental procedures.

Response:

As indicated in the response to DR 133, VV2 Project workers will be required to agree in writing to follow WEAP requirements as part of the mandatory WEAP training. Complying with environmental requirements will be a condition of employment. Corrective measures up to and including termination will be utilized

Data Request 135

Please provide an analysis of nitrogen deposition on soils due to Project emissions and discuss the potential for adverse effects on vegetation and wildlife and the existing desert ecosystem.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Response:

Please refer to Applicant's objection to Data Request 135 docketed on August 17, 2007.

Data Request 136

Please clarify whether the temporary construction laydown areas would be graveled or dust-controlled by Dirt Glue or a similar product. If gravel is used for dust control, please discuss whether and how the gravel would be removed upon completion of construction.

Response:

Temporary construction laydown areas would primarily be wetted and/or graveled to prevent/minimize particulate matter leaving the site. Where gravel is used, it will be removed upon completion of construction activities by manual raking. Collected gravel will be disposed of at an appropriate location.

Data Request 137

Please clarify whether the areas that were temporarily disturbed by construction activities would be reclaimed, revegetated, and/or restored or whether the City would stabilize these areas with Dirt Glue or a similar product upon completion of Project construction.

Response:

Areas temporarily disturbed by construction activities will be reclaimed and revegetated according to the Revegetation Plan that will be prepared for the VV2 Project. The use of products such as Dirt Glue or similar products is not anticipated upon completion of Project construction.

Data Request 138

Please discuss how the City would guarantee that that the areas disturbed by construction activities would, in fact, be reclaimed, revegetated, and/or restored. Please provide the City's definition for each of these three terms. Please discuss how the City would decide whether the areas would be reclaimed, revegetated, or restored for each disturbed area (*e.g.*, transmission line

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

pulling sites, transmission structure assembly areas, ROWs for buried Project pipelines, construction laydown areas).

Response:

The Applicant is committed to completing reclamation of the entire Project's temporary soil disturbance areas, wherein disturbed soil surfaces will be returned to pre-disturbance profiles to the degree feasible. The Applicant is also committed to completing revegetation tasks for areas where native vegetation is to be removed; as will be specified in the VV2 Revegetation Plan to be prepared for the Project. Terms and conditions specified in both the Federal ESA Biological Opinion and the CESA Section 2081 permit are anticipated to specify that reclamation/revegetation of temporary disturbance be completed. Finally, reclamation/revegetation requirements also will be addressed in the CEC's Conditions of Certification for the Project.

Progress at completing site restoration activities is expected to be reported under the Biological Resources Mitigation, Monitoring and Reporting Program associated with the CESA Section 2081 permit, and also will be part of the Closure Plan and ongoing compliance monitoring and reporting associated with the CEC license. Finally, verification of mitigation completion is required in the final (annual) report submitted to CDFG under the CESA Section 2081 permit.

Data Request 139

Please discuss potential impacts on biological resources (including listed and other special status species) due to application of herbicides at the solar field. Please include a discussion of herbicide drift across the Project boundaries.

Response:

Herbicides have the potential to impact vegetative resources to varying degrees, depending on the amount of herbicide coming into contact with treated plant leaf/stem surface areas, the age/stature and type of plant receiving herbicide and the type of herbicide applied. Treated plant leaf "brownout" and possible mortality of annual plants (and on occasion small or young perennial plants) can be expected. The effects of commonly applied herbicide upon vertebrate species when the product label has been complied with are not considered substantially injurious. Issues associated with this data request are also addressed in the responses to other data requests, e.g. DR 39. The method of application of herbicides is a very strictly controlled process that must comply with the specification for the spray bar equipment (focal, low-volume, ground proximal

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

sprayers will be used), the label directions on the herbicide product, and specified safe and effective ambient weather conditions as dictated through the State of California qualified applicator's license training, certification and program. Herbicide will be applied only where needed, primarily in the immediate area of the solar array field. Further, desert tortoises and other special status species known from the area would be excluded from these areas by fencing installed around the facility perimeter prior to any herbicide application; thereby avoiding any situation where herbivores could come into contact with herbicide-treated plants. Herbicide drift across Project boundaries in this instance is not expected; because of the equipment used and application procedures. No special status plants are known to occur within or immediately adjacent to the plant site; such that no impacts to such vegetative species would be anticipated associated with herbicide application.

Herbicide drift across Project boundaries is not expected based on the equipment used and application procedures. Because no special status plants are known to occur within or immediately adjacent to the plant site, no impacts to such vegetative species are anticipated from herbicide application. Furthermore, there have been no reports of any adverse impacts resulting from herbicide application at any of the existing Solar Electric Generating System (SEGS) facilities.

Data Request 140

Please provide a discussion of potential adverse impacts of a heat transfer fluid spill and associated cleanup activities on biological resources.

Response:

Any release of heat transfer fluid would occur only within the fenced area of the power plant facility. Few biological resources are expected to be present in, or have access to, this Project area, although a few mammal and most avian species could possibly access spilled fluids if a spill were to occur. However, Project procedures will ensure that fluid releases are cleaned up very quickly, thereby limiting any potential for exposures to animal species.

In the history of the nine existing SEGS plants, no spill has ever been observed to have adversely affected biological resources. Over the roughly two decades in which SEGS facilities have operated, sensitivity to the possibility of accidental spillage has intensified, and equipment designs, technology improvements, plant layout configurations, and primary (and in some cases secondary) containments have made such a possibility even more remote.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Biological Resources

Response Date: August 29, 2007

Data Request 141

Please provide a copy of the reports *Tom Dodson & Associates. 2003. Focused Desert Tortoise, Focused Burrowing Owl, and General Biological Survey for The SCLA Specific Plan Amendment and Rail Service Project* and *Tom Dodson & Associates. 2005. Updated General Biological Survey and Focused Desert Tortoise Survey (Gopherus agassizii) for Victor Valley Wastewater Reclamation Authority's Proposed Wastewater Treatment Facility Expansion Project* cited in the AFC, Appendix H, on page 129.

Response:

Copies of the requested 2003 and 2005 reports prepared Tom Dodson & Associates are provided as Attachments DR141-1 and DR141-2 on the CD that is part of this submittal in response to CURE Data Requests Set 2.

Data Request 142

Please provide any data or reports that support the assumption that the same special-status species are expected to occur in the same abundance and distribution at all sites considered in the alternatives analysis.

Response:

No formal survey data are known which supports the assumption that the same special-status species occur in the same abundance and distribution at all sites considered in the alternatives analysis. The alternative localities are located in close proximity to the Project site and support near-identical habitat characteristics, such that collected survey data together with California Natural Diversity Database records support the assumption that the same special status species are potentially present in undisturbed habitats where the three alternatives are situated. The abundance of some special status species (i.e., the Desert Tortoise and MGS) may be somewhat less in Alternative C, due to this locality being situated between Airbase Road and the former George Air Force Base property/current Southern California Logistics Airport. The latter developments tend to fragment necessary habitat and/or provide travel barriers to many vertebrate special status species. Alternative B, which is situated somewhat northwest of the Project area, may similarly support less special status species abundance than the Project area; due to its location on the fringe of housing development and recreational use associated with the City of Adelanto. The probable abundance and distribution of special status species in Alternative A, which is situated proximal to the Project area, is considered almost identical to that described for

**VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2**

Technical Area: Biological Resources

Response Date: August 29, 2007

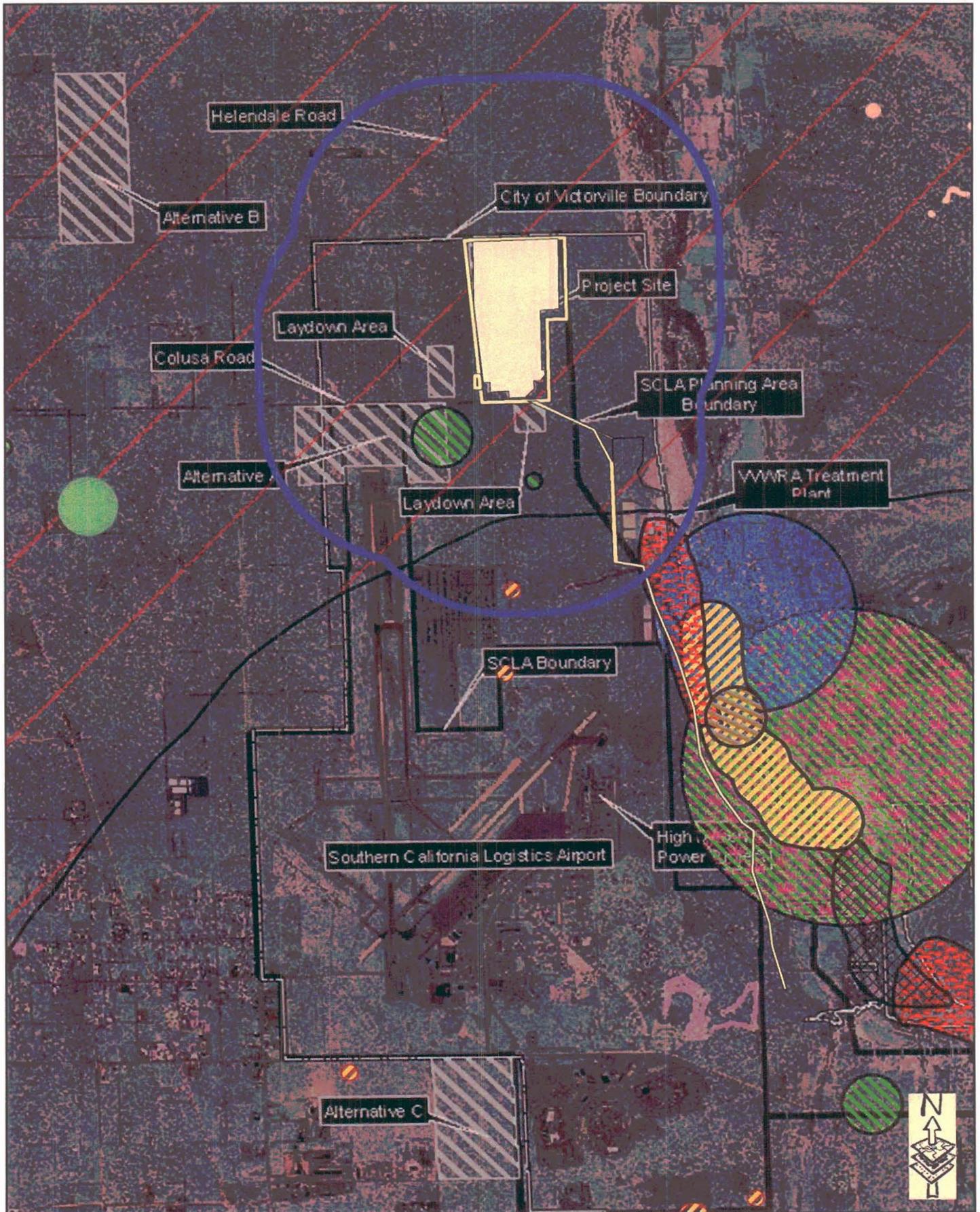
the proposed action area.

Data Request 143

Please provide a map that depicts the California Natural Diversity Database records for the three alternative sites.

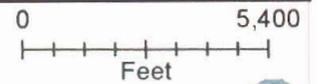
Response:

A map that depicts the California Natural Diversity Database records for a one-mile width analysis area encompassing the Project footprint was included in Appendix 1 of AFC Appendix H. A map that depicts the California Natural Diversity Database records for the three alternatives has also been prepared and accompanies this data request response.



Victorville 2 Hybrid Power Project: CNDDB

- | | | | |
|------------------------|--------------------------|--------------------------|------------------------------|
| Desert Tortoise | Mohave River Vole | Booth's Evening-Primrose | Project layout |
| Mohave Ground Squirrel | San Diego Pocket Mouse | Summer Tanager | 1 mile power plant perimeter |
| Burrowing Owl | Victorville Shoulderband | Coast Horned Lizard | Plant Site |



source: v2project/graphics/mxd/cnddb90.1



VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Waste Management

Response Date: August 29, 2007

Data Request 144

Please clarify the actual transmission line route from MP 2.0 to MP 5.0, especially with respect to known areas of contaminated soil and groundwater associated with George AFB.

Response:

Subsequent to preparation of the Phase 1 Environmental Site Assessment (ESA), the route of Segment 1 of the VV2 Project transmission line was modified. The transmission line route shown in green on Figure 1 of the CURE Data Requests Set 2 is the correct route; this route is shown throughout the remainder of the AFC and is the basis for the impact analyses presented in the AFC for waste management, as well as for all other disciplines

Data Request 145

Please clarify whether the transmission lines, including construction of access roads and support structures, will impact areas of soil and groundwater contamination as identified in Figure 1, including:

Operable Unit 1, Upper Aquifer TCE Groundwater Plume and Lower Aquifer TCE Groundwater Plume;

Operable Unit 3, Landfill 12, Landfill 14, and non-CERCLA Dieldrin Plume.

Response

Although a portion of the transmission line proposed in the AFC crosses over the northern portion of Operable Unit 1, Upper Aquifer TCE Groundwater Plume and Lower Aquifer TCE Groundwater Plume, no contaminated soil or groundwater contamination will be affected. The Operable Unit 1 contaminated groundwater plume is at depths of 90 feet below ground surface (bgs) while excavations for the VV2 Project structures (e.g., transmission structure foundations) are not expected to exceed 30 feet (see AFC page 6.16-8), and thus the VV2 Project activities will not affect the groundwater plume.

The Operable Unit 3 Landfills 12 and 14 are located west of the transmission line route approximately 0.5 mile/2,700 feet and 0.2 mile/1,000 feet from the route, respectively. The non-CERCLA Dieldrin Plume is approximately 0.2 mile/1,000 feet west of the proposed transmission line route at its closest point. The VV2 Project would not be expected to affect these contaminated areas.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Waste Management

Response Date: August 29, 2007

Data Request 146

Please clarify and provide documentation on whether construction workers may be exposed to contaminants in the areas identified above through excavation of contaminated soils, or through potential exposure of contaminated groundwater.

Response:

Although the transmission line route crosses the northernmost extent of Operable Unit 1, Upper Aquifer TCE Groundwater Plume and Lower Aquifer TCE Groundwater Plume; construction workers will not be exposed to known contaminants during excavation activities. As mentioned in the response to Data Request 145, groundwater contamination in this area is at a depth of approximately 90 feet below bgs while excavations for the transmission structures is not expected to exceed 30 feet in depth. Thus, there would be ample separation between Project excavations and contaminated groundwater to ensure that Project workers would not be exposed to contaminated groundwater. As also discussed in the response to Data Request 145, the other contaminated areas identified are no closer to the route than approximately 1,000 feet at the closest point, and thus Project construction workers would not be expected to be exposed to contaminants.

Data Request 147

Please also clarify whether construction activities would impact ecologic receptors, such as wildlife and plant communities, though exposure to soil or groundwater contaminants.

Response:

Since no soil or groundwater contaminants are expected to be encountered during VV2 Project construction activities, ecologic receptors, such as wildlife and plant communities, will not be impacted.

Data Request 148

Please describe any impacts the transmission lines, including support structures and access roads, will have on existing groundwater monitoring wells and extraction wells that the U.S. Air Force installed to address contaminated groundwater.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Waste Management

Response Date: August 29, 2007

Response:

Avoiding areas where Air Force Installation Restoration Program (IRP) activities are ongoing (e.g. monitoring and extraction well locations) was an important criterion in selecting the transmission line route shown in the AFC. However, there are a number of wells associated with cleanup activities within approximately 200 feet of portions of Segment 1 of the Project transmission line route, include one well (SP-3) which is approximately 100 feet from the route.

With wells clearly marked in the field, careful construction planning that recognizes the proximity of the wells, and with proper precautions by Project construction personnel, it is expected that impacts could be avoided. However, it also should be noted that there is some flexibility in the precise location of transmission structures (poles), and thus if needed, it is expected that minor modifications can be made to pole locations to increase the separation distance between Project transmission structures/access roads and the monitoring and extraction wells to provide additional assurance that impacts to the wells will not occur. In summary, no impacts are expected.

Data Request 149

Please specifically discuss whether the construction or maintenance of the lines will in any way affect the effectiveness of the groundwater cleanup that is in progress by destroying or relocating extraction wells used to pump contaminated groundwater to treatment facilities. For example, we have mapped (in green) the route of the transmission line that is depicted in AFC Figure 2-1 to be located within 500 feet of 3 extraction wells (see Figure 1, below).

Response:

As noted in the response to Data Request 148, no impacts are expected on the ongoing groundwater cleanup from VV2 Project transmission line construction or operation/maintenance.

Data Request 150

Please discuss whether groundwater monitoring wells, installed to determine if contamination is present at specific locations in aquifers impacted by former operations at George AFB, will be destroyed by transmission line construction activities. For example, we have mapped (in green) the route of the transmission line that is depicted in AFC Figure 2-1 to be located within 500 feet of 10 groundwater monitoring wells (Figure 1).

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)
CURE DATA REQUESTS, SET 2

Technical Area: Waste Management

Response Date: August 29, 2007

Response:

As noted in the response to Data Request 148, no impacts are expected on the ongoing groundwater cleanup from VV2 Project transmission line construction or operation/maintenance.

Data Request 151

Please also provide documentation that the proposed transmission line routes have been disclosed to the U.S. Air Force, U.S. EPA and the California Regional Water Quality Control Board and any necessary approvals have been obtained to ensure the groundwater remedy is not compromised and human and ecologic exposure to potentially contaminated soils is limited.

Response:

The EPA and the Lahontan Regional Water Quality Control Board are among the agencies with an active role in the Project permitting process, receive Project documents, and thus are well informed of the Project transmission line route. While the Air Force is not involved in the Project permitting process, there are personnel directly involved in the cleanup program who are resident at SCLA, and as such, have access to Project documents. The VV2 Project does not require regulatory approvals that relate to the groundwater cleanup program on nearby properties, although such concerns could be raised by government agencies as part of the CEC licensing process. To date, no such agency concerns have been raised.

Data Request 152

Please provide documentation that the City has obtained all necessary approvals from the agencies listed in the request above to ensure that the groundwater remedy is not compromised, and human and ecologic exposure to potentially contaminated soils is avoided or strictly limited.

Response:

Please see the response to Data Request 151.

VICTORVILLE 2 HYBRID POWER PROJECT (07-AFC-01)

CURE DATA REQUESTS, SET 2

Technical Area: Waste Management

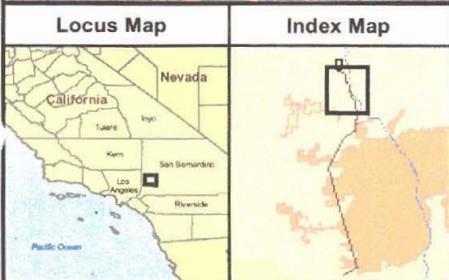
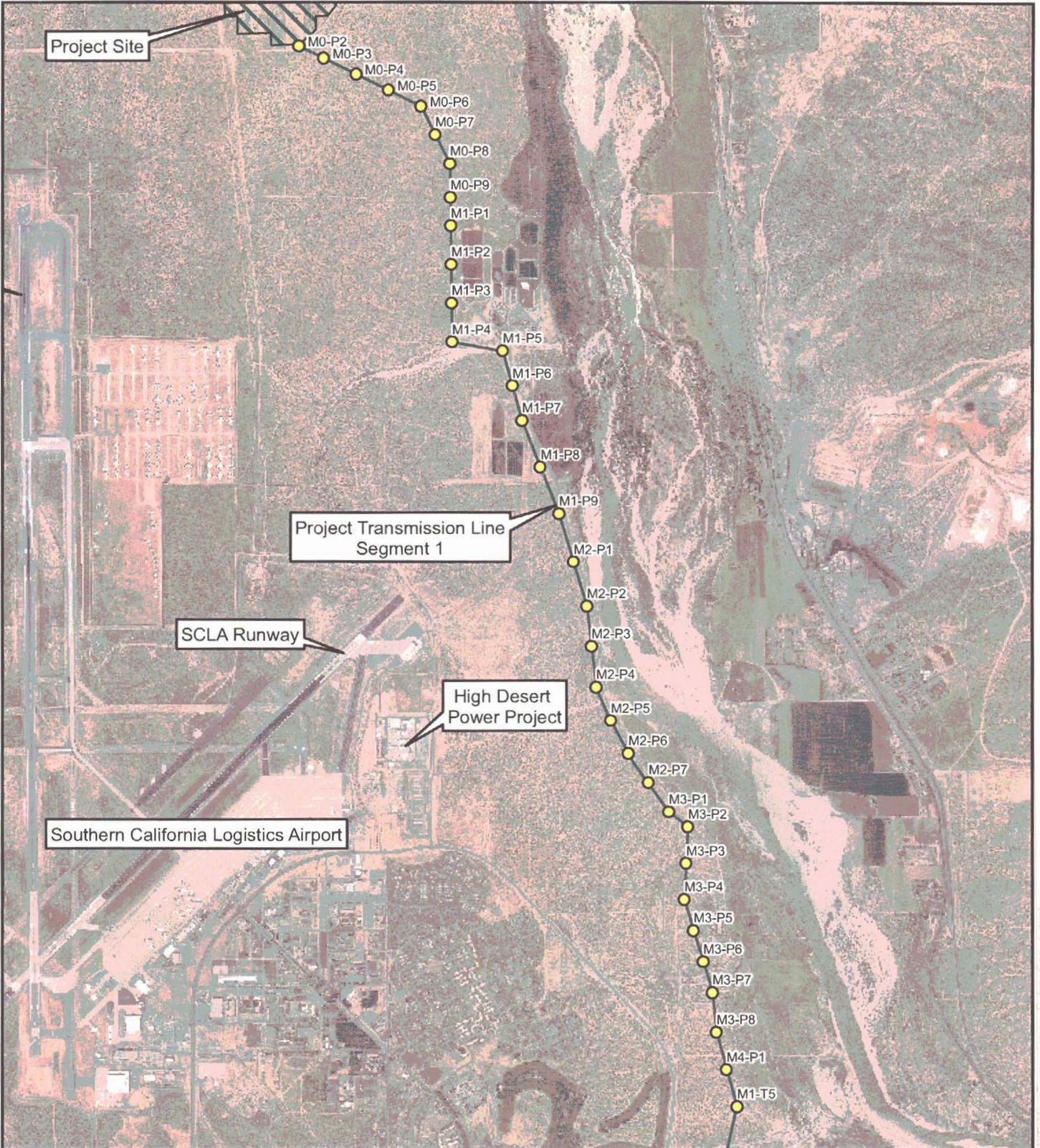
Response Date: August 29, 2007

Data Request 153

Pursuant to requirements of the Border Zone statute, please clarify whether the City has notified the California Department of Toxics Substances Control for a determination of whether proposed transmission lines from MP 2.0 to MP 5.0 are within 2000 feet of hazardous waste property or border zone property and therefore lie within a "Border Zone" of George AFB.

Response:

The City has not so notified the Department of Toxic Substances Control.



Location of Transmission Line Poles Segment 1
Victorville 2 Hybrid Power Project

Source: MapMart Aerial Imagery .61 Meter Resolution Circa 2004
Scale: 1:30,000




Inland Energy, Inc.
ENSR | AECOM

Date: August 2007

Victorville 2 Hybrid Power Project