# APPENDIX K

## Agency and Other Correspondence

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

In Reply Refer To:
FWS-ERIV-09B0187-09SL0578

MAR 19 2009

Erin Riley
EDAW Inc.
1420 Kettner Boulevard, Suite 500
San Diego, California 92101

Subject: Request for Information on Endangered and Threatened Species in the Vicinity of the Proposed Solar Millennium Palen Project, Riverside County, California

Dear Ms. Riley:

This letter responds to your March 2, 2009, letter (received March 4, 2009) requesting information on species of concern, including federally-listed or proposed species, or designated or proposed critical habitats that may occur in and around the Solar Millennium Blythe project solar thermal power generating facility being proposed on Bureau of Land Management (BLM) lands.

Section 7 of the Endangered Species Act of 1973 (Act), as amended, requires Federal agencies to consult with the U.S. Fish and Wildlife Service (Service) should it be determined that their actions may affect federally listed threatened or endangered species. Section 9 of the Act prohibits the "take" (*e.g.*, harm, harassment, pursuit, injury, kill) of federally listed wildlife. "Harm" is further defined to include habitat modification or degradation where it kills or injures wildlife by impairing essential behavioral patterns including breeding, feeding, or sheltering. Take incidental to otherwise lawful activities can be authorized under sections 7 (Federal consultations) and 10 (habitat conservation plans) of the Act.

If a proposed project is authorized, funded, or carried out by a Federal agency and may affect a listed species, then the Federal agency must consult with us on behalf of the applicant, pursuant to section 7 of the Act. During the section 7 process, measures to avoid and minimize project impacts to listed species and their habitat will be identified and incorporated into a biological opinion that includes an incidental take statement that exempts incidental take by the Federal agency and applicant.

At this time, no candidate species occur within the vicinity of the proposed project. However, it appears that the federally-threatened desert tortoise (*Gopherus agassizii*) may occur on and/or in the vicinity of the proposed project. While we do not have site-specific species information for the proposed project area, federally-designated critical habitat for the desert tortoise (Chuckwalla Unit) is located south of the proposed project. Therefore, we recommend that you seek assistance from a biologist familiar with the habitat conditions and associated species, particularly desert tortoise, in and around the project site to assess the potential for direct, indirect and cumulative impacts likely to result from the proposed activity.

We also recommend that, for the 2009 field season, you conduct desert tortoise surveys following the Service's 1992 *Field Survey Protocol For Any Non-Federal Action That May Occur Within The Range Of The Desert Tortoise* and that all potentially suitable tortoise habitat in the action area associated with the proposed project be surveyed. The "action area" is defined by regulation as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR §402.02). This analysis is not limited to the "footprint" of the action nor is it limited by the Federal agency's authority. Rather, it is a biological determination of the reach of the proposed action on listed species. Subsequent analyses of the environmental baseline, effects of the action, and levels of incidental take are based upon the action area.

Please also note that there may be BLM and State sensitive species concerns in this area. Therefore, we recommend that you contact the BLM and the California Department of Fish and Game to obtain lists of sensitive species that may occur in the vicinity of the proposed project and to determine which species may require surveys pursuant to the National Environmental Policy Act and California Environmental Quality Act.

Should you have any questions regarding this letter, survey protocols for federally-listed species, or your responsibilities under the Act, please call Tannika Engelhard of my staff at (760) 431-9440.

Sincerely,

for Karen A. Goebel
Assistant Field Supervisor

Enclosure

cc:
Kim Nicol, California Department of Fish and Game, Bermuda Dunes Field Office
Mark Massar, Bureau of Land Management, North Palm Springs Field Office

**Federally Listed Species**
**Which Occur or May Occur on or Near the Proposed Solar Millennium Palen Project, Riverside County, California**

| Common Name | Scientific Name | Status |
|---|---|---|
| REPTILES | | |
| desert tortoise | *Gopherus agassizii* | T, CH |

E: endangered
T: threatened
CH: critical habitat

PSOMAS

*Information and Engineering Solutions*

July 9, 2009

Tom Meagher
Bureau of Land Management
California State Office
2800 Cottage Way, Suite W-1623
Sacramento, CA 95825-1886

Re: Final Evaluation Letter Report
Palen Solar
Application _____ (Psomas Job 6BLM0101.01)

Under contract #L09PC00076, Task Order TBD, Psomas was retained to "…conduct a civil engineering, geologic and hydrologic review of Plans of Development (POD) for Solar Energy facilities on BLM lands. The review needs to be done to insure that preliminary storm water management, site grading and water supply are properly addressed and technically feasible…."

This letter report summarizes Psomas' findings at the Palen Solar Millennium site.

## SUMMARY OF FINDINGS

Psomas has reviewed the 30% plans, hydrology and engineering for storm water issues related to the SOLAR MILLENIUM Palen solar project and in our opinion, the basic design and layout of storm water facilities are feasible. Even if more detailed topographic information and engineering reveal that some adjustments are needed in the final design, the project foot print should not change to a significant degree. From a stormwater perspective, the project appears to be sufficiently developed to file a notice of intent to complete an EIR / EIS.

## SITE RECONNAISSANCE

Psomas completed a site visit on June 10, 2009 to observe existing conditions at the project site.

Present at the site review were:

Solar Millennium: Gavin Berg

1075 Creekside Ridge Drive
Suite 200
Roseville, CA 95678

916.788.8122
916.788.0600 Fax
www.psomas.com

Chevron: Ralph Hollenbacher
AECOM: Bill Hagmaier & Mike Flack
PSOMAS: Mike Thalhamer, Ernie Leporini, Stefanie Kemen, & Mike Daly
BLM: Claude Kirby,
CEC: Paul Marshall, Richard Latteri

## SITE DRAINAGE

### Scope of review

The overall intent of the review was to identify potential issues which impact existing drainage features and patterns adjacent and downstream of the proposed project. It was not intended to provide input related to the proposed onsite drainage scheme beyond how this scheme might impact areas beyond the project limits.

### Summary Of Project Documents Reviewed:

- *Palen Solar Power Plant Hydrology Report*, May 18, 2009, AECOM (Attachment A)
- Preliminary Civil Construction Plans for Palen Solar Power Project, dated May 4, 2009. (Attachment B)

### Project Hydrology

The hydrologic analysis for the project was reviewed and appears to be well documented and appropriate for site specific conditions. It also appears to be in general compliance with the methodologies outlined in the *Riverside County Hydrology Manual*. However, Psomas provided the following recommendations for the final drainage report:

A reproduction of the appropriate soils map used to determine the site specific soils should be included.

A CD of the HEC-HMS models for both the existing and proposed conditions should be provided for review.

The potential for an increase in curve number (CN) for developed and disturbed watersheds should be considered as there does appear to be the potential for increased runoff from these areas. Under developed conditions all vegetation will be removed. The area will also be graded flat eliminating any potential "surface retention" associated with an uneven terrain, and it will likely be compacted to a greater degree than existing conditions. Numerous collector swales are also proposed which may more effectively convey runoff to the main channels.

channels. Based on the table provided in Appendix D of the Hydrology Report, the developed CN would appear to be closer to 85 for "B" soil consistent with fallow agricultural land. A photograph of existing conditions at the Palen site as well as one from the existing solar field facility just outside of Kramer Junction off of highway 395 have been provided in Attachment C. Assuming that conditions at the developed Palen site will be similar, the photographs provide a clear indication of the potential for increased runoff due to grading and compaction.

The proposed conditions hydrologic model does not appear to provide for any channel routing within the individual solar units, but rather treats them as single watersheds with a discreet point of concentration. This approach, in conjunction with the potentially underestimated CN values, may cause the model to underestimate discharges associated with these watersheds under developed conditions.

Existing Conditions Hydraulics

Under existing conditions the project site is impacted by numerous poorly defined washes and will enter the project area as predominately shallow flow during large events. The report did not include the analysis of existing floodplains limits impacting the upstream project boundary. Formal floodplain mapping to define the limits of where flow enters the property may not be needed to support the drainage design since the intent is to construct collector channels along the entire upstream property boundary. However, a detailed assessment of the floodplains impacting the project would allow for a more site specific design and should be considered.

Proposed Conditions Hydraulics

- Collector Channel Design. The concept design includes collector channels along the upstream property boundary to collect offsite flows for conveyance through or around the property. Flow into the collector channels is primarily from poorly defined shallow washes. Flows during large event occur primarily as shallow sheet flow and there is a tendency for the small washes to migrate or for new channels to form. The collector channels must be appropriately designed to account for the unpredictable flow patterns and to prevent headcutting upstream of the constructed channel. If not protected, these headcuts can quickly become incised to the flowline depth of the collector channel. This may also be an issue where site drainage flows into the constructed channels. Neither the drainage report nor the concept plans have yet addressed this issue.

- Channel Velocities. Velocities within earthen channels should be within acceptable limits to minimize both vertical and lateral channel erosion. Typical maximum velocities for non-consolidated silty sands as observed at portions of the project site range from approximately 3.5 to 5.0 feet per second (ft/s) for the 10-year flow. Higher velocities for less frequent events may be considered if there is sufficient room for some migration of the channel to occur without threat to adjacent structures. Velocities reported in the HEC-RAS model appear to be generally acceptable for unlined channels. A possible exception is the West Side Channel which has a reported 10-year velocity of approximately 7.5 ft/s. A threshold velocity for erosion control should be established based on site-specific conditions and local standards and guidelines. If erosion protection is required but not desired then grade control structures should be utilized to reduce the channel slope thereby reducing channel velocities to within acceptable limits.

- Channel Section. Some of the proposed channels have very large width/depth ratios which will tend to favor incisement of a low flow thalweg within the overall drainage channel. Rather than flow in a very wide and shallow condition, low flows will tend to develop a low-flow channel to more efficiently convey flow. This channel can become quite deep depending on the actual channel slope and can cause bank sloughing or undercut erosion protection measures. It is recommended that the potential issues associated with the formation of a low flow thalweg be considered in the final design.

- Center Channel Diffuser The diffuser associated with the Center Channel does not appear return flow to existing conditions based on the existing flow path delineated in Figure 2. It appears that a "flared" type diffuser as used for the West Side Channel would be more appropriate and should be considered.

Field Decisions

In order to control anticipated flow from the culvert near the southwest corner of the property, it would be ideal to extend or widen the southern channel into the triangular piece of property north of Highway 10. It was unclear at the time who owns the property, but if it is BLM land, and it is possible to include a portion of it in the project boundary, it could facilitate a cleaner, more conservative design. If the property boundary is to remain as shown, it was the consensus of the site review team that a spur dyke should be constructed west of the center channel along the eastern edge of the triangular property. It was also agreed upon by the site review team that the channel along the western/northwestern/northern property line will need to be very conservatively designed and reinforced in order to ensure there could be no future

there could be no future impacts to the existing residence and pond north of the property line. See the attached Base Map (Attachment D).

General report comments

Relevant channel data such as slope range, design Q and velocity range should be included on the proposed channel sections in Appendix I of the Hydrology Report.

The scale of the project may warrant using larger maps to depict existing and future watershed conditions. The scale and size of the maps provided make it very difficult to discern topography or any relevant features.

A CD with the HEC-RAS input files should be provided with the final drainage report.
The constructed channel bottom widths for the West Channel in the report do not match those called for on the plans.

General plan comments

Relevant channel data such as slope range, design Q and velocity range should be included on the proposed channel sections on Sheet 3 of the Preliminary Civil Construction Plans.

Provide locations of channel sections on Sheet 3 of the Preliminary Civil Construction Plans as there is no cross-reference to determine where each section is located.

WATER SUPPLY

Scope of review
The overall intent of the review was to "…evaluate [the water supply] for sustainability, water quality and for potential impacts to the environment such as groundwater depth, springs, effects underground water movement such as plumes, salinity or movement between aquifers…."

Summary of Project Documents Reviewed

Chuckwalla Valley Groundwater Basin, California's Groundwater Bulletin 118.

Water Supply Requirements

According to Michael Flack of AECOM (Developer's consultant) per email dated June 6, and personal conversations during the site visit, water supply requirements for the Palen site are:

Water quantity required

The operational groundwater use at each site is about 150 acre-feet per year (afy) per solar field. So for the projects the total operational use is:

Average usage = 300 afy, or 186 gallons per minute (gpm)
Peak usage (estimated at 50% more during summer months), 279 gpm
Construction supply = 1,100 acre feet over 3 years (estimated) or 370 afy

These volumes should be considered preliminary and subject to revision as the analysis of the construction program groundwater requirements is ongoing. Construction water will be primarily used for site grading and dust suppression.

Water quality required

- Domestic supply – Federal Safe Drinking Water Act and California Title 22 requirements
- Mirror Washing – Reverse osmosis or electro-dialysis reversal followed by ion exchange
- Power cycle makeup water - Reverse osmosis or electro-dialysis reversal followed by ion exchange
- Dust suppression – desalination waste blended with raw water.
- Construction water – no treatment, raw water.

Proposed water source

The water for the Palen project will be provided from groundwater and wells dug on the site. Information on the local groundwater conditions and impacts from proposed project pumping has not been determined. Water resource investigations have been proposed and work plans developed for consideration by the BLM. The environmental assessment (EA) documents have been reviewed and are presently being revised for resubmission to the BLM. It is anticipated that the investigation programs will be initiated within the next few weeks.

The Palen site is located within the Chuckwalla Valley Groundwater Basin, which, according to the U.S. Bureau of Reclamation is tied hydraulically to the Colorado River. There are several wells, including high capacity irrigation wells, close to the site, and one within the project boundaries. Although there is a good chance of onsite wells providing adequate quantities of water, this will not be confirmed until drilling and test pumping of a test well is accomplished on the project site.

The level of total dissolved solids (TDS) in groundwater at the site is reported to be high. Treatment to levels needed for project operations will produce levels of brine (water with concentrated levels of dissolved solids), for which disposal will have to be addressed.

Historically, water from wells in California may be used without establishing rights, so water rights are not an issue. However, because of the project's hydrologic connection to the Lower Colorado groundwater basin, the U.S. Bureau of Reclamation is attempting to require and establish entitlements for groundwater as a part of the Colorado River hydrologic system. They have issued draft regulations (which have subsequently been withdrawn). Eventually, some form of allocation of groundwater may be established for groundwater at the Palen project site.

Wastewater disposal

There is no anticipated process wastewater, only sanitary wastewater to be discharged into one or more leach fields. For the Palen facility, sanitary wastewater quantity is estimated to be 166,000 gallons per month, or 5,500 gallons per day.

Comments and Recommendations

Because formal documentation of water supply criteria has not been done, detailed evaluation of water supply issues is not possible at this time.

Developer's consultant, AECOM, has identified the issues to be resolved and is proceeding with their work plan. Items that BLM should monitor as work progresses include:

- Test well drilling and evaluation – insure that the evaluation confirms that adequate quality and quantity of water is available. This evaluation should also include:
    - a survey of data from other wells in the area and summarization of the data
    - construction of at least two monitoring wells, and data collection of monitoring wells in conjunction with test pumping/evaluation of the test well.

- Water Rights – If regulations are promulgated changing the status of groundwater, insure that Developer obtains rights to an adequate water supply.

- Brine disposal – If brine is to be blended with raw water and used for dust control, insure that California Regional Water Quality Control Board approval is obtained for this discharge.

If you should have questions about this report, or require additional information please do not hesitate to contact me.

Sincerely,
PSOMAS

Michael G. Thalhamer, PE
Project Manager

MGT:ast

Attachments Enclosed:

A. Palen Solar Power Plant Hydrology Report, May 18, 2009, AECOM
B. Preliminary Civil Construction Plans for Palen Solar Power Project, AECOM, 30% Conceptual Engineering Plans, May 4, 2009
C. Photographs Depicting Anticipated Change in curve number (CN)
D. Palen Base Map with Psomas Recommendations

**DEPARTMENT OF THE NAVY**
**NAVAL AIR WARFARE CENTER WEAPONS DIVISION**
1 ADMINISTRATION CIRCLE
CHINA LAKE, CA 93555-6100

575 I AVENUE SUITE 1
POINT MUGU, CA 93042-5049

IN REPLY REFER TO:

5090
52F00ME/3433
10 August 2009

Ms. Jessie Audette
Vice President of Development
Solar Millennium LLC
1625 Shattuck Avenue, Suite 270
Berkeley, CA 94709-1161

Subj: Solar Millennium Proposed Blythe & Palen Solar Power Projects

Dear Ms. Audette:

Thank you for the opportunity to review the proposed Solar Millennium Blythe and Palen solar power projects. I am providing this response on behalf of the Department of Defense Region IX Renewable Energy Working Group.

As we have discussed, we have no concerns with the Blythe project. The Palen project underlies several low-level military training routes and could impact military testing and training conducted on those routes. However, after evaluation, we have determined that the project will not have significant mission impacts. This determination is based on the information you provided, including the towers and transmission lines. If there are any changes, particularly in the height of the structures, please notify us.

If we can be of any assistance to you in the future, please don't hesitate to contact us.

Sincerely,

A. M. Parisi
Head, Sustainability Office
By Direction of the Commander

DEPARTMENT OF TOXIC SUBSTANCES CONTROL
P.O. Box 806
Sacramento, CA 95812-0806

(916) 327-2500

April 4, 1995

Mr. David M. Rib, Manager of Regulatory Affairs
KJC Operating Company
41100 Highway 395
Boron, CA 93516

Re: REQUEST FOR RECLASSIFICATION OF THERMINOL CONTAMINATED SOIL AS NONHAZARDOUS PURSUANT TO SECTION 66260.200(f), TITLE 22, CALIFORNIA CODE OF REGULATIONS (22 CCR) - WASTE EVALUATION UNIT FILE #F143 (WEU FILE #F143)

Dear Mr. Rib:

The Office of Scientific Affairs, Department of Toxic Substances Control (Department) has completed its review of the information submitted to the Department by you on behalf of the KJC Operating Company. The information was submitted in support of a petition to reclassify soil contaminated with a heat transfer fluid (HTF) known as Therminol as nonhazardous pursuant to 22 CCR section 66260.200(f). Based on our review of all the analytical data and information submitted, the Department finds that the Therminol-contaminated soil possesses mitigating physical and chemical characteristics which render it insignificant as a hazard to human health and safety, livestock, and wildlife. The Department, therefore, classifies the Therminol-contaminated soil as nonhazardous.

Background

The KJC Operating Company (KJC) facility, located in Boron, California, encompasses approximately 160 acres where a series of parabolic mirror troughs called Solar Collecting Assemblies (SCAs) are configured into multiple rows to form a solar field. The HTF, a synthetic material whose composition is a mixture of 26.5% biphenyl and 73.5% diphenyl oxide, is circulated through heat collection elements positioned at the focal point of each of the SCAs. The HTF is heated to between 650 and 735 degrees fahrenheit and, through a series of heat exchangers, generates steam for power production.

Occasional accidental or incidental spills or leaks of HTF result in contamination of the soils beneath the point of leakage. When these occur, the HTF-contaminated soils are excavated and transported to a central storage area. Historically, these HTF-contaminated soils were typically disposed of off-site into a Class I waste landfill. However, alternative treatment technologies have been explored for the management of this waste, the most recent being an on-site bioremediation facility. An estimated 500 cubic yards of HTF-contaminated sandy soil is generated per year. The average concentration of HTF in these contaminated soils ranges between 3,000 and 10,000 ppm.

Department's position that the test results demonstrate that the mitigating property is the much lower vapor pressure at the maximum ambient temperature, which will result in greatly reduced inhalation exposure than the theoretical value. Therefore, the Department grants your request for reclassification of the spilled Therminol as nonhazardous based on the information you previously submitted.

Conclusion

Based on the review of the analytical data and information provided, the Department finds that the HTF contaminated soils poses an insignificant hazard and classifies the waste as nonhazardous pursuant to 22 CCR section 66260.200(f). The Department's formal decision as outlined in this letter is contingent on the accuracy and representativeness of the analytical data and information provided to the Department for review. Furthermore, the nonhazardous classification granted in this letter is not to be construed as an approval by the Department to leave the HTF-contaminated soil on the site or for any other uses. Waste classification determines whether a waste must be managed and disposed of as a hazardous waste in accordance with Chapter 6.5, Division 20, of the California Health and Safety Code.

Irrespective of the Department's classification decision outlined in this letter, the management and disposal of the HTF-contaminated soils are subject to the requirements of the respective Regional Water Quality Control Board and other state, federal, or local agencies who have regulatory jurisdiction in this matter. It is the Department's understanding that the California Energy Commission, Energy Facilities Siting and Environmental Protection Division will also be providing direct oversight to insure that the HTF-contaminated soils will be managed and disposed of properly.

Should you have any questions regarding this classification letter, you may contact me at the letterhead address and telephone number. Classification of heat transfer fluid, ref: your letter of February 14, 1995.

Sincerely,

James C. Carlisle, DVM, MSc
Waste Evaluation Unit
Office of Scientific Affairs

cc: Jeffrey J. Wong, PhD
Science Advisor to the Director

Sharon Fair
Surveillance and Enforcement, Region 4

Ronald Pilorin
Waste Evaluation Unit
Office of Scientific Affairs