State of California – The Resources Agency ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4593

January 26, 2009



Susan Sanders
Susan Sanders Biological Consulting
12213 Half Moon Way
Nevada City, California 95959

Subject: Beacon Solar Power Plant
Standard Lake and Streambed Alteration Provisions
For Notification No. 2008-0146-R4

Dear Ms. Sanders:

The Department of Fish and Game (Department) is responding to your correspondence of January 7, 2009, requesting that the Department provide the California Energy Commission (CEC) standard provisions that would be typically included in a Streambed Alteration Agreement (SAA), as well as provide provisions that are site specific to the Beacon Solar Energy Project (Project). It is our understanding that this request for SAA provisions is made by the CEC in lieu of developing a standalone SAA because the Warren-Alquist Act (Public Resources Code Section 25000 et seq.) would exempt the Project from State permits which would normally be required, including a Stream Alteration Agreement (Fish and Game Code Section 1600 et seq.). Please be aware that these provisions are in response to the Project description received by the Department on July 17, 2008.

Attached are recommended provisions that we would typically include in a SAA for a Project of similar scope, scale, and location. Conditions 2, 6, 7, 20, 21, 27, 28, 29, and 34 have been tailored to be more site specific. The remaining provisions are considered generic in language.

It has recently come to our attention through electronic correspondence provided by the CEC that the 100-year flood plain will be altered downstream of the Project footprint. The Department is concerned about potential impacts to a small community and to desert habitat located downstream of the Project site from changes to the location, character, and timing of flood waters in this area. Any impacts to the existing FEMA-designated 100-year flood plain, both upstream and downstream of the Project footprint, should be thoroughly discussed in a hydrologic analysis report.

The Department is concerned that the Project description currently allows for storm water to drain across the Project site as sheet flow into the newly rerouted Pinetree Creek. Storm water run-off from the solar array site could contain chemicals deleterious to aquatic and terrestrial plant and wildlife including chemicals used to clean solar panels, herbicides, and pesticides. Storm water and sheet flow across the Project site

should be directed away from any "Waters of the State" (including the re-routed portion of Pinetree Creek) and into retention basins. It is our understanding that retention basins will be constructed for the Project but have not been included in the Project description.

Thank you for the opportunity to provide additional comments and recommendations regarding the proposed rerouting of the Pinetree Creek. We look forward to reviewing the hydrologic analysis report that you will be providing. Depending upon the results of the hydrologic analysis, we may have additional comments and recommendations. If you have any questions regarding these comments, please contact Julie Means, Senior Environmental Scientist, at 1234 East Shaw Avenue, Fresno, California 93710 or by telephone at (559) 243-4014, extension 240.

Sincerely,

for

Jeffrey R. Single, Ph.D.
Regional Manager

Attachment

cc: Rick York
California Energy Commission
Environmental Office
1516 Ninth Street, MS 40
Sacramento, California 9581

Eric Solorio
California Energy Commission
Environmental Office
1516 Ninth Street, MS 40
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Julie Means
Senior Environmental Scientist

Julie Vance
Senior Environmental Scientist

Annette Tenneboe
Environmental Scientist

**PROVISIONS:**

General

1. Agreed activities within the stream may commence after the Department has signed this Agreement, pre-Project protective measures are implemented, pre-construction surveys are completed, and when the drainage is dry. This Agreement shall remain in effect for two (2) years beginning on the date signed by the Department. If the Project is not completed prior to the expiration date defined above, the Operator shall contact the Department to negotiate a new expiration date and any new requirements.

2. The Operator shall submit a set of finalized engineering plans and drawings and a construction start date to the Department (mail, or fax to (559) 243-4020, with reference to Beacon Solar Project Notification No. 2008-0146-R4) prior to beginning any activities covered by this Agreement. The Operator shall also notify the Department upon the completion of the activities covered by this Agreement.

3. Prior to starting any activity within the stream, all workers shall have received training from the Operator's staff, a qualified biologist, or approved alternate trainer, on the contents of this Agreement, the resources at stake, and the legal consequences of non-compliance.

Flagging/Fencing

4. At the work-site, the Operator will identify the limits of the required work area. The work area limits will be identified with brightly colored mesh fencing or flagging as appropriate. These limits will be identified by the Operator prior to construction. Fencing and flagging will be maintained in good repair for the duration of the Project. All areas beyond the identified work area limits will be considered Environmentally Sensitive Areas (ESA) and will not be disturbed.

Wildlife

5. If any wildlife is encountered during the course of construction, said wildlife will be allowed to leave the construction area unharmed.

6. Impacts to desert scrub habitat resulting from the construction of the re-routed portion of Pinetree Creek shall be mitigated off-site as required by the California Energy Commission (CEC) for the loss of desert tortoise and Mohave ground squirrel habitat.

7. Impacts to the desert scrub and broomscale habitat resulting from the removal of Pinetree Creek from the Solar Array site shall be mitigated as described in the Attachment 8, Conceptual Mitigation Plan provided by Beacon Solar.

8. If any State- or Federal-listed threatened or endangered species could be "taken" (defined in Fish and Game Code Section 86 as hunt, pursue, catch, capture, or kill; or

attempt to hunt, pursue, catch, capture, or kill) as a result of Project activities, the Operator is responsible for obtaining the appropriate authorization required for both intentional (capture and relocation) and incidental "take". Determining if "take" will occur shall require plant and animal surveys conducted at the appropriate time of year for the species, using established survey protocols. The Operator shall use qualified biologists for this task.

9. Pre-activity surveys for sensitive species including rare, threatened, endangered, and fully-protected species, with emphasis on desert tortoise and Mohave ground squirrel, shall be conducted within a 250-foot radius buffer by a qualified biologist within 30 days prior to commencement of the proposed construction activity or as specified within current survey protocols. The Operator shall notify the Department of the discovery of any such rare, threatened, or endangered species prior to commencement of construction. Surveys must be conducted on the "work area" and access routes. The purpose of pre-activity surveys is to avoid intentional and incidental "take", confirm previous observations, identify any subsequent occupation of the stream corridor and other work areas by listed species, and clearly mark all resources to be avoided by Project activities. All pre-construction surveys for threatened or endangered species shall be done in accordance with the appropriate protocol, and during the appropriate time of year for wildlife, and during the appropriate floristic period for flowering species. Surveys for any special status species shall be completed unless appropriate pre-construction surveys determine the lack of habitat for these species or potential habitat is flagged and avoided.

10. A qualified biological monitor shall be available on-site during all Project activities. The biologist shall walk immediately ahead of the equipment during all brushing and grading activities, as they occur, in areas that have not been recently brushed or graded.

11. If any precincts, burrows, or habitats are confirmed occupied by special status and sensitive species on, or within 250 feet of any work site, all potentially disturbing activities shall be halted immediately and the Department and the United States Fish and Wildlife Service (USFWS) shall be consulted. Work shall not resume without the Department's concurrence. The Department's approved protective measures shall be implemented. If "take" of State-listed species cannot be avoided, a State incidental "take" permit shall be required. Absolutely no disturbance to known listed species habitats shall occur or continue without approval from the Department.

12. Access/egress, staging and disposal site locations shall be selected in areas that do not provide habitat for listed/sensitive species.

13. No off-road driving shall be permitted except within the approved work site. Storage and parking areas, as well as borrow and spoil sites, are subject to all of the "take" avoidance and mitigation measures that apply to the other work areas.

14. To protect nesting birds, no construction shall be completed from February 1 through August 1 unless the following surveys are completed by a qualified biologist.

> Raptors: Survey for nesting activity of raptors (with emphasis on burrowing owl) within a minimum 250-foot buffer around the defined work area shall be conducted. This survey shall be conducted at appropriate nesting times. If any

active nests are observed, these nests (including nesting burrows) shall be designated as occurring within a sensitivity area around the nest site. If nests are identified, a qualified raptor biologist shall establish a 250-foot no-disturbance buffer and shall otherwise mark the area that cannot be disturbed by the Project until such time that the nesting attempt is completed.

Other Avian Species: Survey riparian areas for nesting activity (with emphasis on special status species) within the defined work area, two (2) to three (3) weeks before construction begins. If any nesting activity is found, the Operator shall contact the Department and mitigation, specific to each incident, shall be developed.

Vegetation

15. Vegetation, fill material, or material removed from the stream shall not be stockpiled in any streambed or on its bank.

16. The disturbance or removal of vegetation within the agreed work area shall not exceed the minimum necessary to complete operations. Precautions shall be taken to avoid other damage to non-target vegetation by people or equipment.

17. All invasive exotic plant species may be removed from the Project site in areas disturbed by Project-related activities. Exotic plant species shall be bagged and appropriately disposed of in a landfill. Exotic species shall not be used in composting or left otherwise exposed in or around the Project site. Heavy equipment and other machinery shall be inspected for the presence of undesirable species prior to on-site use and cleaned to reduce the risk of introducing exotic plant species into the Project site.

Vehicles

18. Vehicles will not be driven, or equipment operated, in water-covered portions of the stream or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, except as otherwise provided for in the Agreement, and as necessary to complete authorized work.

19. Any equipment or vehicles driven and/or operated within or adjacent to the stream will be checked and maintained daily to prevent leaks of materials that, if introduced to water, could be deleterious to aquatic life. Staging/storage and refueling areas for equipment and materials will be located outside of the stream.

Pollution

20. Rain water run-off from the solar array site could contain chemicals deleterious to aquatic and terrestrial plant and wildlife and shall be directed away from any "Waters of the State", including the re-routed portion of Pinetree Creek, and into retention basins.

21. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum based products, or any other substances which could be hazardous

to aquatic life, wildlife, and desert habitat resulting from the Project-related activities will be prevented from contaminating the soil and/or entering the "Waters of the State". Hazardous materials may include chemicals used to clean solar panels, cooling system waste water, herbicides and pesticides, and these substances could subsequently enter the stream as run-off from rain events. Any hazardous materials placed within or where they may enter a stream or lake, by the Operator or any party working under contract or with the permission of the Operator, will be removed immediately.

22. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located outside of the stream channel and banks. Stationary equipment such as motors, pumps, generators, compressors and welders, located within or adjacent to the stream, shall be positioned over drip-pans. Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily to prevent leaks of materials that, if introduced to water, could be deleterious to aquatic life. Vehicles shall be moved away from the stream prior to refueling and lubrication.

23. Equipment fuels, lubricant, and solvents such as antifreeze, hydraulic and transmission fluids shall be stored in closed containers to prevent accidental encounters with terrestrial and avian wildlife.

24. The cleanup of all spills will begin immediately. The Department of Fish and Game will be notified by the Operator of any spills and will be consulted regarding cleanup procedures.

Erosion Control

25. Standard erosion control measures shall be utilized throughout all phases of operation where sediment run-off from exposed slopes threatens to enter "Waters of the State". Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream.

26. Sediment laden water will not be discharged into the stream, or created within the stream. The Operator's ability to minimize sedimentation will be the subject of pre-construction planning and feature implementation. Precautions to minimize sedimentation may require that the work site be isolated so that sediment, or other deleterious materials, are not allowed to pass to downstream reaches. The placement of any structure or materials in the stream for this purpose, not included in the original Project description, will be coordinated with the Department. Upon Department determination that sediment levels resulting from Project-related activities constitute a threat to aquatic life, activities associated with the sedimentation will be halted until effective Department approved control devices are installed, or abatement procedures initiated.

Structures

27. A hydrologic analysis of the rerouted stream shall be conducted by qualified individuals retained by the CEC, and the results submitted to the CEC and Department. The purpose of a hydrologic analysis is to verify whether or not all proposed structures and other constructed features will be properly aligned and otherwise engineered,

installed, and maintained, to assure resistance to washout, and to erosion of the stream bed, stream banks and/or fill both upstream and downstream, and that they will not cause long-term changes in water flows that adversely modify the existing upstream or downstream stream bed/bank contours or increase sediment deposition. Any impacts to the existing FEMA-designated 100-year flood plain, both upstream and downstream of the Project footprint, should be thoroughly analyzed in the hydrologic analysis.

28. The recontoured stream shall be designed, constructed and maintained such that it does not constitute a barrier to movement of desert tortoises or other wildlife, or cause an avoidance reaction.

29. The Operator shall develop an engineered plan for the proposed equipment laydown area, which describes protective structures, procedures for moving equipment, fuels and materials, and plan for conveyance of stormflows, during a rainfall event. This Plan shall be completed and approved by the Department prior to commencement of any proposed activities within the stream. A feature of the Plan shall be that the upstream and downstream movement of both terrestrial and aquatic life shall not be impaired at any time.

30. Human-generated debris shall be removed from the stream and banks.

Fill/Spoil

31. Rock, gravel, and/or other materials shall not be imported into, or moved within the stream, except as otherwise addressed in this Agreement.

32. The placement of sediment (spoil sites) shall not be located on the stream bank where sand could cover and destroy aquatic or riparian vegetation. Spoil storage sites shall not be located within the stream where spoils shall be washed into the stream, or where it shall cover aquatic or riparian vegetation. Rock, gravel and/or other materials shall not be imported into, or moved within, the bed or banks of the stream except as otherwise addressed in this Agreement. Excess fill shall be moved off site at Project completion

33. Any fill shall be limited to the minimal amount necessary to accomplish the agreed activities. Excess fill material shall be moved off-site at Project completion. Fill length, width, and height dimension shall not exceed contours of the original dimensions of the streambed. Except as otherwise specified in the Agreement, fill construction materials other than on-site alluvium shall consist of clean, silt-free gravel or rock.

Diversion

34. The existing flows for Pinetree Creek may not be altered until after a new route for stream flows is constructed.

35. Any approved temporary stream diversion will be coordinated with the Department. Flow diversion will be done in a manner that will prevent pollution and/or siltation, and which will provide flows to downstream reaches. Flows to downstream reaches will be

provided during all times that the natural flow would have supported aquatic/terrestrial life. Said flows will be of sufficient quality and quantity, and of appropriate temperature to support aquatic/terrestrial life both above and below the diversion.

Restoration

36. Excess material and debris shall be removed from the Project site following construction. All Project-generated debris, building materials, and rubbish shall be removed from the stream and from areas where such materials could be washed into the stream.

37. Structures and associated materials, not designed to withstand high seasonal flows, shall be removed to areas above the high-water mark before such flows occur.

38. The Operator shall remove and recontour any Project-constructed access corridors to the stream bottom to the original contour.

39. Following construction activities, the Operator will final contour the site to match the adjacent slope of the land and to provide the appropriate surface water drainage. All areas subject to temporary ground disturbance, including storage and staging areas, temporary roads, etc., will be recontoured, if necessary, and revegetated to promote restoration of the area.

40. If the stream's low-flow channel, bed or banks have been altered, these shall be returned as nearly as possible to their original configuration and width, without creating future erosion problems.

41. All disturbed soils and roads within the Project site shall be stabilized to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) with slopes toward the stream will be stabilized to reduce erosion potential. Planting, seeding and mulching is also recommended for all areas of disturbed streambank. Where suitable vegetation cannot reasonably be expected to become established, non-erodible materials not described in the original Notification will be coordinated with the Department. The Operator is advised to consult with the Natural Resources Conservation Service for recommended soil stabilization alternatives.

42. All exposed slopes and exposed areas on the bank shall be seeded, mulched and fertilized with a blend of locally native grass species. One (1) or two (2) non-native sterile perennial grass species may be added to the seed mix, provided that the amount does not exceed 25 percent of the total seed mix by count. Locally native wildflower and/or shrub seeds may also be included in the seed mix. The proposed seed mix shall be submitted to the Department prior to application of the seed mix. Seeding shall be completed in November of the year construction ends, or in the event the Project is not completed within one (1) year, seeding shall be completed each November of each year of construction. Seeding shall be covered with broadcast straw. At the discretion of the Department, all exposed areas where seeding is considered unsuccessful after 90 days

shall receive appropriate soil preparation and a second application of seeding, mulch and fertilizer as soon as is practical on a date mutually agreed upon.

43. Seeding will be repeated in a timely manner, as necessary to ensure establishment. Operator will ensure that exotic pest plants do not become dominant in the areas that are disturbed by Project activities, and that the native species are successfully re-introduced.

44. Prior to initiating construction, the Operator shall submit a Final Revegetation and Monitoring Plan for the Project. Living, native, woody trees, bushes and branches greater than or equal to four (4) inches diameter at breast height (DBH) shall be replaced by native species at a three to one (3:1) ratio. Trees greater than or equal to twenty-four (24) inches DBH shall be replaced at a ten to one (10:1) ratio. Lost riparian habitat acreage shall be replaced at a minimum of a two to one (2:1) ratio. To ensure a successful revegetation effort, all planted vegetation and trees shall be monitored and maintained to assure at least 70 percent of the plantings survive for five (5) years. The Operator shall monitor the success of the revegetation and erosion control measures, submitting a monitoring report to the Department annually for the term of this Agreement, or until the Department has determined that restoration of the site is complete.