



**California Regional Water Quality Control Board
Lahontan Region**



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REVIEW OF PRELIMINARY STAFF ASSESSMENT FOR BEACON SOLAR ENERGY PROJECT, FREMONT VALLEY, KERN COUNTY, CA

Introduction

On April 1, 2009, the Lahontan Regional Water Quality Control Board (Lahontan Water Board) received the California Energy Commission's Preliminary Staff Assessment (PSA) for Beacon Solar Energy Project (Project). The California Energy Commission (Energy Commission) requested that Lahontan Water Board staff review the portions of the PSA relevant to the Lahontan Water Board's authority.

Under the Warren-Alquist Act, and Governor's Executive Order S-14-08, the Energy Commission has the authority to streamline the permitting process for renewable energy generation facilities by incorporating the regulatory requirements and conditions of various local and State agencies. All necessary State and local permits will be issued to Beacon Solar, LLC, (Applicant) through the Energy Commission's certification process.

Project Description

The proposed project would consist of a concentrated solar electric generating facility on approximately 2,000 acres in the eastern portion of Kern County, California. The Project, as proposed, would use parabolic trough solar thermal technology to produce electrical power using a steam turbine generator fed from a solar steam generator.

Receiving Waters

The receiving waters that could be affected by this project are Fremont Valley Groundwater Basin and the ephemeral washes: Pine Tree Creek, which bisects the site, an unnamed wash in the western portion of the site and an unnamed wash in the eastern portion of the site. Additionally, any other waters of the State crossed by the linear structures (e.g., utility lines) outside of the 2,000 acre site would be considered potential receiving waters.

California Environmental Protection Agency



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Lahontan Water Board Staff Comments

The following are Staff's comments on the PSA. For reference, the title of the relevant PSA section or subsection is italicized in all comment headings on specific PSA section or subsections.

Comment 1: General Comment Regarding Waters of the United States and Waters of the State

In a February 5, 2008 letter, the U.S. Army Corps of Engineers (USACE) determined that the ephemeral drainages on the site are not waters of the United States. The USACE stated the basis for this non-federal jurisdiction determination was because the waters did not meet the requirements of Code of Federal Regulations 33 parts 328.3(a)(3)(iii) and 328.3(a)(1).

The PSA contains numerous references to the National Pollutant Discharge Elimination System (NPDES) permits and concludes that storm water will be adequately regulated through the Applicant's enrollment under the State Water Resources Control Board's (State Water Board) NPDES general permits No. CAS000002 (Construction General Permit) and No. CAS000001 (Industrial General Permit). The PSA also states that activities in stream beds will be permitted in accordance with Federal Clean Water Act (CWA) sections 404 and 401. Since the USACE has determined there are no waters of the United States on the site, these federal permits do not apply to this Project.

The drainages affected by the Project are waters of the State, as defined by California Water Code (Water Code) section 13050, and are subject to State requirements in accordance with Water Code section 13260. Therefore, the requirements for construction and industrial storm water management will be issued in the form of proposed Waste Discharge Requirements (WDRs) that will be incorporated in the Energy Commission's certification process. The PSA should be revised to reflect the proposed WDRs, which Lahontan Water Board staff is currently drafting for this Project. The PSA should eliminate references to the CWA permitting process for non-federal jurisdiction waters. Soil and Water conditions 2 through 5 must be revised to reflect the WDR requirements under development by Lahontan Water Board staff.

Comment 2: General Comment For Clarity

Several portions of the PSA state that estimates or assumptions used in an evaluation are "conservative." However, it is not always clear what the word "conservative" implies. For clarity, the text should explicitly state why the estimate is conservative, e.g., the estimate reflects assumptions that result in a value that is large relative to the range of possible values.

Comment 3: *Executive Summary, Energy Commission's "In Lieu" Permitting Process*

Please change "Lohantan" to "Lahontan" in the last line of Page 1-1.

Comment 4: *Project Location and Project Description*

Pages 1-2 and 3-2 of the PSA state that the section of the Garlock fault that bisects the site is expressed as an elevation change of up to 10 feet. The Geologic Hazards and Resources section of the PSA and the Application for Certification (AFC) describe the fault escarpment as between 15 and 25 feet high. The Soil and Water Resources section of the PSA describes the escarpment as 20 feet. The document should be revised for consistency and cite appropriate supporting documentation. See Comment 5, which describes Lahontan Water Board staff's concerns regarding potential water quality impacts related to the Garlock fault.

Comment 5: *Hazardous Materials Management, Seismic Issues*

This section concludes that hazardous material storage tanks would not fail as a result of an earthquake. It is not clear if the seismic evaluation addresses both ground shaking and fault rupture on the Garlock fault, which bisects the site. The text should be revised to specify whether the seismic evaluation included both ground shaking and fault rupture.

Additionally, the discussion of the seismic evaluation does not consider the numerous pipelines containing heat transfer fluid. In accordance with Water Code section 13173, heat transfer fluid would be defined as a designated waste if it were released to the environment. Since leaks are expected under normal (static) conditions, it is likely that even minor ground shaking could result in significant leakage throughout the Project area. If this section of the Garlock fault were subject to even a small displacement, all the pipelines crossing the fault would likely fail and result in a massive release of heat transfer fluid. These possible releases could cause significant impacts to the environment and waters of the State. What preventative measures and/or emergency response actions would be in place to deal with a seismically induced failure of the pipelines?

Soil and Water Resources

The following comments are on the *Soil and Water Resources* section of the PSA.

Comment 6: *Impacts to Groundwater*

The groundwater resources of the Antelope Valley are in the process of being adjudicated. The groundwater modeling discussed in this section, assumes a flow rate of 1,000 acre-feet per year from the Antelope Valley groundwater basin to the Fremont

Valley groundwater basin. Was this adjudication process considered in the evaluation of groundwater impacts and water balance analysis?

Comment 7: Construction Wastewater

The discussion of construction waste water streams on page 4.9-29 appears to be incomplete. The only waste water stream discussed is a one-time hydrostatic testing of pipelines and pressure vessels. Please evaluate construction activities to determine if all waste streams have been identified, e.g., vehicle wash down.

Comment 8: Construction Wastewater

This section states that "discharge of any waste water during construction would be required to comply with applicable Basin-wide waste discharge regulations adopted by the LRWQCB." The reference to "Basin-wide" WDRs is unclear. If there are specific WDRs that are applicable to these discharges, they should be included in the Laws, Ordinances, Regulations, and Standards (LORS) for *Soil and Water*.

As noted in Comment 1, State Water Board's *Construction General Permit* does not apply at this site and Lahontan Water Board staff is drafting facility-specific WDRs for the Project. Some State Water Board or Lahontan Water Board general permits may apply to specific Project construction waste water, e.g., State Water Board's *Statewide General WDRs for Discharges to Land With A Low Threat to Water Quality* (Order No. 2003-0003-DWQ). This general permit includes various low-threat and low-volume discharges, such as discharges from well development and hydrostatic pipe test water. Please note, because the Project includes a very extensive piping system, the discharge volume for hydrostatic pipe testing could be relatively high. In a case of a high volume discharge, this general permit would not apply. Also, see Comments 1, 12, and 13.

Comment 9: Operation Wastewater

The Applicant submitted a draft Report of Waste Discharge (ROWD) to the Lahontan Water Board on May 21, 2008. In a January 12, 2009 letter, Lahontan Water Board staff stated the draft ROWD was incomplete and outlined its deficiencies. The Applicant submitted a revised draft ROWD on March 23, 2009 and Lahontan Water Board staff responded in an April 17, 2009 letter (Attachment 1) stating that the revised draft ROWD did not supply all previously requested information. To date, the Applicant has not responded to staff's April 17, 2009 letter. Therefore, the WDRs for the evaporation ponds and surface treatment units have not been developed.

Please note, that the final WDRs will contain specific requirements regarding measures to protect water quality, including the installation of additional monitoring wells rather than using existing water supply wells for detection monitoring purposes. The existing supply wells are not screened properly to be used as monitoring wells. In addition,

there must be an adequate number of monitoring wells downgradient of each land disposal unit and adequate background monitoring wells.

Comment 10: *Operation Wastewater*

Section 4.0 of the revised draft ROWD (March 2009) confirms that the two primary sources of waste water (cooling tower blow down and ion exchange regeneration stream) and one occasional source (storm water accumulated in the Land Treatment Unit) are designated waste per the California Code of Regulations (CCR) title 27 section 20210. Designated waste can only be discharged into appropriate waste management units; therefore, use of this waste water for dust control is prohibited.

Comment 11: *Soil Erosion Potential by Water and Wind, During Construction*

The first full paragraph on page 4.9-33 seems to imply that there is no historical record of precipitation or storm water runoff reaching the valley floor in the vicinity of the Project site. However, the AFC states the mean annual precipitation is approximately 6 inches and the 100-year flood plain bisects the site. Please revise this section for clarity and consistency with existing and historical conditions.

Comment 12: *Soil Erosion Potential by Water and Wind, During Construction*

Lahontan Water Board staff does not agree with the stated conclusion on page 4.9-34, that the best management practices (BMPs) proposed in the draft Drainage, Erosion, and Sediment Control Plan/Storm Water Pollution Prevention Plan (DESCP/SWPPP) and Soil & Water Condition 2 are sufficient to prevent significant soil erosion by water during construction. Firstly, the draft DESCP/SWPPP states it is a preliminary document because the soils analysis has not been finalized and because the grading and drainage calculations are based on "conceptual" designs. Additionally, the DESCP/SWPPP does not contain BMPs or have a plan for containment of discharge runoff to adjacent properties. Therefore, Lahontan Water Board staff does *not* consider the draft DESCP/SWPPP adequate to protect against erosion by water during construction. Secondly, Soil & Water Condition 2 is not applicable because the Project cannot be permitted under the State Water Board's General Construction Permit. See Comment 1 regarding the proposed WDRs.

Comment 13: *Soil Erosion Potential by Water and Wind, During Construction*

The PSA does not address potential impacts to waters of the State by the construction of linear facilities (e.g., gas pipeline) outside of the Project site. Construction of linear features across waters of the State must be addressed by proposed WDRs that Lahontan Water Board staff is currently drafting. See Comment 1.

Comment 14: Soil Erosion Potential by Water and Wind, During Operation

Lahontan Water Board staff does not agree that the draft DESCP/SWPPP and Soil & Water Condition 4 provide adequate protection against soil erosion by water during Project operation (see Comment 12). Additionally, Soil & Water Condition 4 is not appropriate because the Project cannot be permitted under the State Water Board's General Construction Permit (see Comment 1). Finally, the text should provide some information on the Compliance Project Manager, e.g., who does this manager represent, what is the manager's role and authority.

Comment 15: Construction Storm Water

See Comment 12 regarding the adequacy of DESCP/SWPPP and Soil & Water Condition 2. Lahontan Water Board staff does not agree that these measures are adequate or applicable for the protection of water quality.

Comment 16: Operation Storm Water

Lahontan Water Board staff concurs with the proposed revisions to the Conceptual Drainage Study listed on pages 4.9-37 and 4.9-38. Staff wishes to reinforce the PSA's recommendations that storm water conveyances must be designed so that they do not discharge directly to the proposed diversion channel and that all retention basins be located and designed for rapid infiltration of the storm water rather than evaporation. Staff also believes that the redesigned diversion channel must consider the information that will be generated by the recommended geomorphic assessment. Staff concurs with the recommendations and comments provided by the Energy Commission and California Department of Fish and Game on the redesigned diversion channel. Additionally, the Project must eliminate or mitigate losses of the ephemeral wash's natural functions and designated beneficial uses of "groundwater recharge" and "wildlife habitat."

Comment 17: Proposed Conditions of Certification, Soil & Water 5

The meaning of the last sentence of item "c." on page 4.-5, is unclear. It appears to be an incomplete sentence.

Comment 18: Proposed Conditions of Certification, Soil & Water 5

The last sentence of item "1." on page 4.9-56 should be revised to specify that comments from the Lahontan Water Board will also be considered by the Compliance Project Manager.

Alternatives

The following comment is on the *Alternatives* section of the PSA.

Comment 19: State Water Board Resolution 75-58, Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling

The Applicant is proposing the use of high quality groundwater for power plant construction and power plant cooling. State Water Board's *Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling* (Power Plant Cooling Policy, adopted by Resolution 75-58) states that fresh inland waters should only be used for power plant cooling if other sources of water or other methods of cooling would be environmentally undesirable or economically unsound. Based on the PSA alternative analysis, other methods of cooling and other sources of water are economically viable. No undesirable environmental impacts were identified for these cooling methods or sources of water. Therefore, the use of high quality groundwater for power plant cooling would not be consistent with this State Water Board Policy. Please note that policies adopted by the State Water Board and approved by the Office of Administrative Law, such as the Power Plant Cooling Policy, have the weight of law.

Laws, Ordinances, Regulations, And Standards

The following comments apply to the LORS tables of the *Soils and Water* and *Waste Management* sections of the PSA.

Comment 20: Soil & Water Table 1 and Waste Management Table 1

State Water Board policies are approved by the Office of Administrative Law and have the weight of law. Therefore, the policies should be included under "State LORS" rather than included with guidance.

Comment 21: State LORS for Soil and Water Resources and Waste Management: Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.)

Lahontan Water Board staff concurs with the inclusion of the *Porter-Cologne Water Quality Control Act* (Water Code sections 13000 et seq.) in the LORS for the PSA sections: *Soils and Water* and *Waste Management*. Although staff agrees that Water Code 13000 et seq. are applicable in entirety, the following highlight specific examples of applicable sections of the Water Code.

| Source | Description |
|-------------------------------------|--|
| Water Code sections 13050 and 13260 | The surface waters, including ephemeral washes, affected by the Project are waters of the State and are subject to State requirements and the Regional Water Boards' authority to issue WDRs for construction and industrial storm water activities. |

| Source | Description |
|---|--|
| <p>Water Code sections 13240, 13241, 13242, 13243 and Water Quality Control Plan (Basin Plan) for the Lahontan Region</p> | <p>The Basin Plan establishes water quality objectives, including narrative and numerical standards that protect the beneficial uses of surface and ground waters in the region. The Basin Plan describes implementation plans and other control measures designed to ensure compliance with statewide plans and policies and provides comprehensive water quality planning. The following chapters are applicable to determining appropriate control measures and cleanup levels to protect beneficial uses and to meet the water quality objectives: Chapter 2, <i>Present and Potential Beneficial Uses</i>; Chapter 3, <i>Water Quality Objectives</i>, and the sections of Chapter 4, <i>Implementation</i>, entitled "Requirements for Site Investigation and Remediation," "Cleanup Levels," "Risk Assessment," "Stormwater Problems and Control Measures," "Erosion and Sedimentation Control Measures," "Solid and Liquid Waste Disposal to Land," and "Groundwater Protection and Management."</p> <p><u>Water Quality Objectives:</u> Region-wide numeric and narrative objectives for surface waters are described in Chapter 3 of the Basin Plan under the "Water Quality Objectives for Surface Waters" and region-wide objectives for groundwater under the "Water Quality Objectives for Ground Water."</p> <p><u>Beneficial Uses:</u> Beneficial uses of minor surface waters of Koehn Hydrologic Unit (625.40) are: municipal and domestic supply, agricultural supply, industrial service supply, groundwater recharge, navigation, water contact recreation, non-water contact recreation, warm freshwater habitat, and wildlife habitat. The beneficial uses of the groundwaters of the Fremont Valley Hydrologic Unit (6.46) are: municipal and domestic supply; agricultural supply; industrial service supply; and freshwater replenishment.</p> <p><u>Waste Discharge Prohibitions:</u> Regionwide prohibitions are listed under "Regionwide Prohibitions" in Section 4.1 of the Basin Plan. Prohibitions specific to Fremont Valley Hydrologic Unit are listed in Chapter 4, under "Unit/Area-Specific Prohibitions", and subheading of "Searles Valley Hydrologic Area," which includes the Fremont Valley Hydrologic Unit.</p> |



| Source | Description |
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| Water Code section 13173 | Defines designated waste as either: a) Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to section 14142 of the Health and Safety Code or, b) Non-hazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or could reasonably be expected to affect beneficial uses of the waters of the state contained in the appropriate state water quality control plan. |
| Water Code section 13243 | States that Regional Water Boards may specify conditions or areas where the discharge of waste will not be permitted. The discharge of designated waste can only be discharged to an appropriately designed waste management unit. |
| California Water Code (CWC) Section 13261 | Administrative Civil Liability (ACL) is a monetary assessment imposed by a regional board or the State Board. Coverage of up to \$1,000 per day for failure to furnish reports of waste discharge or failure to pay annual program fees. (\$5,000 per day for non-NPDES discharges if hazardous waste is involved and there is a willful violation.) |
| CWC Section 13262 | At the request of the Regional Board or State Board, the Attorney General can seek judicial civil liabilities on behalf of the Regional Board or State Board for CWC violations, essentially the same ones for which the Regional Board or State Board can impose ACLs. Maximum per-day or per-gallon civil monetary remedies are two to ten times higher when imposed by the court instead of the Regional Board. The Attorney General can also seek injunctive relief in the form of a restraining order, preliminary injunction, or permanent injunction pursuant to California Water Code sections 13262, 13264, 13304, 13331, 13340 and 13386. Injunctive relief may be appropriate in emergency situations, or where a discharger has ignored enforcement orders or does not have the ability to pay a large ACL. |
| Water Code section 13263 | The Lahontan Water Board will regulate the proposed discharge of fill material, including structural material and/or earthen wastes into wetlands and other waters of the State through WDRs. The Lahontan Water Board considers WDRs necessary to adequately address potential and planned impacts to waters of the State and to require mitigation for these impacts to comply with the water quality standards specified in the Basin Plan. |

| Source | Description |
|-------------------|---|
| CWC Section 13264 | <p>The following violations of requirements in WDRs for discharges regulated by the WDR Program are priority violations:</p> <ul style="list-style-type: none"> (a) Failure to monitor as required; (b) The failure to maintain required freeboard in ponds; (c) Other violations as determined by the Water Board. |
| CWC Section 13265 | <p>Coverage of up to \$1,000 per day for discharging without a permit. (\$5,000 per day for non-NPDES discharges if hazardous waste is involved and violation is due to negligence.)</p> |
| CWC Section 13267 | <p>Compliance with WDRs, Basin Plan prohibitions, enforcement orders, and other provisions of law administered by the State Board or Regional Boards can be determined through criteria such as discharger self-monitoring reports (SMRs), compliance inspections, facility reporting, complaints, or file review.</p> <p>Failure to submit reports required by WDRs, CWC sections 13267 and 13383, CWC section 13260, regulations or Water Quality Control Plans within 30 days from the due date, or submission of reports which are so deficient or incomplete as to impede the review of the status of compliance are priority violations. When required in WDRs or other enforceable orders, the failure to clearly identify all violations of applicable requirements in a cover letter or in the SMR is a priority violation. In addition, failure to comply with the notification requirements contained in CWC sections 13271 and 13272 is a priority violation.</p> <p>CWC sections 13267(b) and 13383 allow regional boards to require technical or monitoring reports from any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste in accordance with the conditions in the section. Failure to comply with requirements made by a regional board pursuant to CWC section 13267(b) is a priority violation and may result in administrative civil liability pursuant to CWC section 13268.</p> |
| CWC Section 13268 | <p>Failure to comply with orders made pursuant to CWC section 13267 may result in administrative civil liability. Coverage of up to \$1,000 per day for failing or refusing to furnish technical or monitoring reports or falsifying information therein. (Up to \$5,000 per day for non-NPDES discharges if hazardous waste is involved and there is a knowing violation.)</p> |

| Source | Description |
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| CWC Section 13271 | <p>CWC section 13271 requires any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the state, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the state to notify the Office of Emergency Services of the discharge as specified in that section. The Office of Emergency Services then immediately notifies the appropriate regional board and the local health officer and administrator of environmental health of the discharge.</p> <p>Coverage of up to \$20,000 for failing to notify the Office of Emergency Services of a discharge of hazardous substances that exceeds the reportable quantity or more than 1000 gallons of sewage.</p> |
| CWC Section 13272 | Coverage of not less than \$500 and not more than \$5000 per day for each day of failure to notify the Office of Emergency Services of a discharge of any oil or product in or on the waters of the state. |
| CWC Section 13300 | The Regional Board can require the discharger to submit a time schedule which sets forth the actions that the discharger will take to address actual or threatened discharges of waste in violation of requirements. Time Schedule Orders that require submission of technical and monitoring reports should state that the reports are required pursuant to CWC section 13267. |
| CWC Section 13301 | Cease and Desist Orders (CDOs) are adopted pursuant to CWC sections 13301-13303. CDOs may be issued to dischargers violating or threatening to violate WDRs or prohibitions prescribed by the Regional Board or the State Board. CDOs are often issued to dischargers with chronic non-compliance problems. |
| CWC Section 13304 | Cleanup and Abatement Orders (CAOs) are adopted pursuant to CWC section 13304. Allows Regional Water Boards to compel cleanup and defines the parameters of the cleanup. |
| CWC Section 13308 | CWC section 13308 authorizes the Regional Board to issue a Time Schedule Order which prescribes a civil penalty if compliance is not achieved in accordance with the time schedule. The Regional Board may issue a Time Schedule Order if there is a threatened or continuing violation of a cleanup and abatement order, cease and desist order, or any requirement issued under CWC sections 13267 or 13383. |

| Source | Description |
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| CWC Section 13323 | <p>Imposition of civil liability.</p> <p>Regional Board Executive Officers may issue an ACL Complaint. The ACL Complaint describes the violation and provision of law authorizing imposition of the civil liability, proposes a specific civil liability, and informs the recipient that a public hearing will be held within 90 days after the Complaint is served.</p> <p>Upon receipt of an ACL Complaint, the discharger(s) may waive its right to a public hearing and pay the liability; negotiate a settlement (memorialized in the form of an amended complaint); or appear at the Regional Board or State Board hearing to dispute the Complaint.</p> |
| CWC Section 13327 | <p>Amount of liability</p> <p>"In determining the amount of civil liability, the Regional Board, and the State Board upon review of any order pursuant to Section 13320, shall take into consideration the nature, circumstance, extent, and gravity of the violation or violations, whether the discharge is susceptible to cleanup or abatement, the degree of toxicity of the discharge, and, with respect to the violator, the ability to pay, the effect on ability to continue in business, any voluntary cleanup efforts undertaken, any prior history of violations, the degree of culpability, economic benefit or savings, if any, resulting from the violation, and other matters as justice may require."</p> |
| CWC Section 13331 | <p>Injunction</p> <p>"Upon the failure of any person or persons to comply with any cease and desist order issued by a regional board or the State Board, the Attorney General, upon request of the board, shall petition the superior court for the issuance of a preliminary or permanent injunction, or both, as may be appropriate, restraining such person or persons from continuing the discharge in violation of the cease and desist order."</p> |
| CWC Section 13340 | <p>Injunctive relief for emergencies</p> <p>"Whenever a regional board finds that a discharge of waste within its region is taking place or threatening to take place which does or will cause a condition of pollution or nuisance, constituting an emergency requiring immediate action to protect the public health, welfare, or safety, the Attorney General, upon request of the board, shall petition the superior court to enjoin such discharge..."</p> |

| Source | Description |
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| CWC Section 13350 | Specifies the civil liabilities and remedies proposed for violations of CDOs, CAOs, or other orders or prohibitions. |
| CWC Sections 13399 through 13399.3 | <p>Minor violations</p> <p>The purpose of these sections is to establish an enforcement policy for violations of this division that the enforcement agency finds are minor when the danger they pose to, or the potential that they have for endangering, human health, safety, or welfare or the environment are taken into account.</p> <p>Minor violations include: (1) inadvertent omissions or deficiencies in recordkeeping that do not prevent an overall compliance determination, (2) records (including WDRs) not physically available at the time of the inspection provided the records do exist and can be produced in a timely manner, (3) inadvertent violations of insignificant administrative provisions that do not involve a discharge of waste or a threat thereof, (4) failure to have permits available during an inspection, and (5) violations that result in an insignificant discharge of waste or a threat thereof; provided, however, there is no significant threat to human health, safety, welfare or the environment.</p> |
| CWC Section 13510 | "It is hereby declared that the people of the state have a primary interest in the development of facilities to recycle water containing waste to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the state." |
| CWC Section 13550 | "The Legislature hereby finds and declares that the use of potable domestic water for nonpotable uses, including, but not limited to, cemeteries, golf courses, parks, highway, landscaped areas, and industrial and irrigation uses, is a waste or an unreasonable use of the water within the meaning of Section 2 of Article X of the California Constitution if recycled water is available which meets all of the following conditions, as determined by the State Board..." |

Comment 22: State LORS for Soil and Water Resources and Waste Management: Additional State LORS

Neither LORS tables for the *Soils and Water* or *Waste Management* sections appear to be complete. The both PSA tables should be revised for consistency with the following tabulation of requirements and their descriptions.

| Source | Description |
|---|---|
| Title 27 CCR , section 20000 et seq. and title 23 CCR, section 2510 et seq. | <p>Includes requirements for siting and minimum waste management standards for discharges of waste to land. Establishes monitoring and corrective action requirements for discharges to land, including spills and leaks and other unauthorized discharges. Requires assurances of financial responsibility for closure and post-closure activities and corrective actions for all known or reasonably foreseeable releases.</p> <p>Specifies violations of requirements in WDRs as priority violations including failure to install and/or maintain required thickness of acceptable cover material, failure to monitor (ground and surface water) as required, failure to respond to evidence of a release of waste to groundwater as required in WDRs or other enforceable orders (i.e., failure to develop and implement an Evaluation Monitoring and/ or a Corrective Action Program), and failure to maintain required freeboard.</p> <p>Provisions of title 27 CCR apply to designated and non-hazardous solid waste. Provisions of title 23 CCR apply to hazardous waste. Engineered alternatives that are consistent with title 27 and title 23 CCR performance goals may be considered for approval by the Regional Water Boards.</p> |
| Title 23 CCR, Division 3, Chapter 15 | Regulates all discharges of hazardous waste to land that may affect water quality. Broadly defines a waste management unit as "an area of land, or portion of a waste management facility, at which waste is discharged." Therefore, unless exempted, all discharges of hazardous waste to land that may affect water quality are regulated by Chapter 15. |
| Toxic Pits Cleanup Act of 1984, Health & Safety Code 25208 et seq. | Addresses the regulation of "surface impoundments" containing hazardous liquids or hazardous wastes containing free liquids. Grants specific authorities to the State Water Board and Regional Water Boards in order to protect the waters of the state from contamination. |

| Source | Description |
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| California Civil Code section 815.3 | Contains requirements pertaining to conservation easements. |
| State Water Board's <i>Statement of Policy with Respect to Maintaining High Quality Waters in California</i> (Resolution No. 68-16, "Antidegradation Policy") | Requires Regional Water Boards, in regulating the discharge of waste, to: a) maintain existing high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses, and will not result in water quality less than that described in State or Regional Water Boards policies; and b) require that any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters, must meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that: a) a pollution or nuisance will not occur and b) the highest water quality consistent with maximum benefit to the people of the State will be maintained. |
| State Water Board's <i>Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling</i> (Power Plant Cooling Policy, Resolution No. 75-58) | Fresh inland waters should only be used for power plant cooling if other sources of water or other methods of cooling would be environmentally undesirable or economically unsound. |
| State Water Board's <i>Policy with Respect to Water Reclamation in California</i> (Resolution No. 77-01) | Policy with respect for Water Reclamation in California The State Board and Regional Boards shall encourage reclamation and reuse of water in water-short areas. Reclaimed water will replace or supplement the use of fresh water or better quality. |

| Source | Description |
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| <p>State Water Board's <i>Adoption of Policy Entitled Sources of Drinking Water</i> (Resolution No. 88-63)</p> | <p>Policy with respect for Sources of Drinking Water</p> <p>Incorporated into the basin plan. Designates all groundwater and surface waters of the states drinking water except where the total dissolved solids are greater than 3,000 milligrams per liter, the well yield is less than 200 gallons per day from a single well, the water is a geothermal resource or in a water conveyance facility, or the water cannot reasonably be treated for domestic use using either best management practices of best economically achievable treatment practices.</p> |
| <p>State Water Board's <i>Policies and Procedures for Investigations and Cleanup and Abatement of Discharges Under Water Code Section 13304</i> (Resolution No. 92-49)</p> | <p>Establishes requirements for investigation and cleanup and abatement of discharges. Provides that cleanup and abatement actions are to implement applicable provisions of Title 23, CCR, Chapter 15, to the extent feasible. Also requires the application of section 2550.4 of Chapter 15 when approving any alternative cleanup levels less stringent than background. Requires remediation of the groundwater to the lowest concentration levels of constituents technically and economically feasible, which must at least protect the beneficial uses of groundwater, but need not be more stringent than is necessary to achieve background levels of the constituents in groundwater.</p> |
| <p>State Water Board's <i>Adoption of a Policy for Water Quality Control for Recycled Water</i> (Resolution No. 2009- 0011)</p> | <p>Recycled Water Policy (not yet approved by Office of Administrative Law as of May 14, 2009)</p> <p>The Recycled Water Policy is intended to promote sustainable local water supplies. The purpose of this Policy is to increase the use of recycled water from municipal wastewater sources that meets the definition in CWC section 13050(n), in a manner that implements state and federal water quality laws.</p> |

| Source | Description |
|--|--|
| State Water Board's Water Quality Enforcement Policy | <p>The State Board and the Regional Boards are the principal state agencies with primary responsibility for the coordination and control of water quality. In the Porter-Cologne Water Quality Control Act (Porter-Cologne), the Legislature declared that the "state must be prepared to exercise its full power and jurisdiction to protect the quality of the waters in the state from degradation..." (CWC section 13000). Porter-Cologne grants the Boards the authority to implement and enforce the water quality laws, regulations, policies and plans to protect the groundwater and surface waters of the state.</p> <p>The primary goal of the Enforcement Policy is to create a framework for identifying and investigating instances of noncompliance, for taking enforcement actions that are appropriate in relation to the nature and severity of the violation, and for prioritizing enforcement resources to achieve maximum environmental benefits. Toward that end, it is the intent of the State Board that the Regional Boards operate within the framework provided by this Policy.</p> |

Lahontan Water Board staff requests that these comments be addressed in the Energy Commission's Final Staff Assessment. If you have any questions or comments, please contact me directly at (530) 542-5574 or RBooth@waterboards.ca.gov.



Richard W. Booth, PG, CHG
Senior Engineering Geologist

Attachment 1: April 17, 2009 Letter from the Lahontan Water Board to Scott Busa

cc: Kenneth Stein – NextEra Energy LLC
Michael Flack – AECOM
Sara Head – AECOM
Mike Tietze - Worley Parsons
Jared Foster – Worley Parsons
Christopher Mynk - Kern County Planning Department
Jane Luckhardt – Downey Brand LLP
Rachael Koss – Adams Broadwell Joseph & Cardoza
Joe Koutsky – Lahontan Water Board, Victorville Office
Scott Busa – Beacon Solar Project

RWB/T: Beacon PSA comment letter
Case file: Beacon Solar, Kern County



California Regional Water Quality Control Board Lahontan Region



Linda S. Adams
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Arnold Schwarzenegger
Governor

April 17, 2009

Scott Busa
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REVIEW OF REPORT OF WASTE DISCHARGE, BEACON SOLAR ENERGY PROJECT, FREMONT VALLEY, KERN COUNTY, WDID No. 6B150901001

Beacon Solar, LLC, (Applicant) submitted a Report of Waste Discharge (RoWD) for the Beacon Solar Energy Project (BSEP) on May 21, 2008. The California Regional Water Quality Control Board, Lahontan Region (Lahontan Water Board) issued a comment letter on the May 2008 RoWD on January 12, 2009. In response to the Lahontan Water Board letter, the Applicant submitted a Revised RoWD on March 20, 2009.

Project Description

The Applicant is proposing to construct, own, and operate the BSEP. The proposed project would consist of a concentrated solar electric generating facility on approximately 2,000 acres in the eastern portion of Kern County, California.

BSEP will use parabolic trough solar thermal technology to produce electrical power using a steam turbine generator fed from a solar steam generator. The solar steam generator will receive heated transfer fluid (HTF) from solar thermal equipment composed of arrays of parabolic mirrors that collect energy from the sun.

Disposal Facilities

Process water wastes, including cooling tower blowdown and waste streams from the neutralization tank, would be disposed to lined, onsite evaporation ponds. Constituents of concern would include chloride, sodium, sulfate, total dissolved solids, biphenyl, diphenyl oxide, potassium, selenium, and phosphate. The Revised RoWD proposes three evaporation ponds with a nominal surface area of 40 acres and a land disposal unit consisting of approximately 7.4 acres. The surface impoundments are the disposal facilities for wastewater from operations at BSEP. A land treatment unit will be used to receive, temporarily store, and treat soil contaminated with heat transfer fluid from spills and leaks, which commonly occur in the operation of this type of solar facility.

California Environmental Protection Agency

Receiving Waters

Receiving waters that could be affected by this project are Fremont Valley Groundwater Basin and the ephemeral streams, Pine Tree Creek, which bisects the site, and an unnamed wash, which drains into the western portion of the site. Additionally, any other waters of the State crossed by the linear structures (e.g., utility lines) outside of the 2,000 acre site would be considered potential receiving waters.

Incomplete RoWD

As submitted, the Revised RoWD is incomplete. Specific information needed to complete the RoWD is identified below.

Necessary Information for the RoWD Requested in Lahontan Water Board Letter Dated January 12, 2009

The Revised RoWD does not contain all of the information previously requested by the Lahontan Water Board (January 12, 2009 comment letter). Specific deficiencies are outlined in the following text.

1. Waste Characterization

a. The Revised RoWD states that the wastewater would be classified as designated waste under California Water Code section 13173, because the wastewater contains constituents that could affect the beneficial uses of the waters of the State. The specific constituents must be listed in order to design an appropriate monitoring program.

b. There are discrepancies between Table 8, Predicted Chemistry of Evaporation Pond Residue, and Table 3-4 of Appendix G, Predicted Chemistry of Evaporation Residue. For example, selenium and zinc are listed in Table 8, but not in Table 3-4. Hexavalent chromium and sulfate are listed in Table 3-4, but not in Table 8. Also, there are some differences of the predicted concentrations for the same constituent. For example, the predicted concentration of boron is 247 parts per million (ppm) in Table 8 and 457 ppm in Table 3-4. The predicted concentration of fluoride is 630 ppm in Table 8, but 166 ppm in Table 3-4. These discrepancies must be resolved prior to the adoption of waste discharge requirements for the facility.

c. The Revised RoWD provides additional information on waste characterization and includes the statement that heat transfer fluids "biodegrade relatively rapidly in the environment, have slight toxicity to tested terrestrial species, higher toxicity to aquatic species, and a potential to bioaccumulate." The Lahontan Water Board requires additional information to evaluate the potential threat from the waste stream. Provide specific information regarding anticipated degradation rates, potential breakdown products, and toxicity, fate and transport information for HTF and its breakdown products.

2. Plot Plan

Lahontan Water Board staff apologizes that the January 12, 2009 letter specified that all figures should be 8.5 x 11 inches. Staff realizes that the features of a 2,000-acre site cannot be adequately portrayed at such a scale. Please include all figures at an appropriate scale and size. Also, staff could not locate the Assessor's Parcel Numbers or the parcel boundaries on Figure 2.

3. Flood Protection

The Lahontan Water Board requested information on facility-wide flood protection. The January 12, 2009 letter stated "Provide a description of the measures that are taken for controlling stormwater runoff and runoff at the facility." Much of the required information appears to be contained in the Applicant's Conceptual Drainage Study (Drainage Study), which was submitted to the California Energy Commission's (CEC). The CEC issued a Preliminary Staff Assessment (PSA) in April 2009 that included an evaluation of the Drainage Study. Based on the PSA, offsite stormwater, under current conditions, flows across the site via Pine Tree Creek and small drainage swales. As proposed, the BSEP project would alter historic stormwater flow paths and change runoff patterns from the property. Site development would include an onsite stormwater collection system that would discharge the majority of runoff directly into a rerouted Pine Tree Creek. The PSA concluded that runoff from the site as well as potential nuisance flows or discharges of hazardous substances from plant operation and maintenance would cause significant impacts to the receiving waters. The PSA also raised concern regarding the retention basin design and location.

Lahontan Water Board staff concurs with the CEC's concerns regarding stormwater as expressed in the PSA and concurs with the relevant conditions listed in the Soil and Water Resources section of the PSA.

Additionally, the PSA discusses the proposed design for rerouting the Pine Tree Creek. The PSA concludes that the design of the rerouted channel is inadequate for flood control and for reproducing the hydrologic and hydromorphic functions of the creek. Based on the Public Meeting held in California City on April 14, 2009, Lahontan Water Board staff understands that the design for the rerouted creek is currently being modified. This information must be submitted with a subsequent revision or amendment to the Revised RoWD.

4. Civil Engineering Design Package

The Lahontan Water Board's January 12, 2009 letter instructed the Applicant to include a Plan of Development/Civil Engineering Design Package in the Revised RoWD. The plan/package was to include grading, clearing, excavation, and stormwater management system plans. The intent of this comment was for a facility-wide plan. This information was not provided in the Revised RoWD.

5. Design Report and Operations Plan

a. The Revised RoWD proposed three double-lined evaporation ponds with a nominal surface area of 40 acres. The purpose of multiple ponds was to allow plant operations to continue in the event that one of the ponds would need to be taken out of service. Each pond would be designed to have enough surface area so that the evaporation rate exceeds the process wastewater and cooling tower blowdown rate at peak design conditions and at annual average conditions. However, the PSA concluded that to contain the expected flows, the impoundments would have to have a total area of at least 43.5 acres. Also, according to the PSA, the applicant would construct another pond (in addition to those three proposed to hold wastewater) to be used for dilution of potentially toxic salinity concentrations in the evaporation ponds. With this additional pond, the nominal evaporation pond surface area would be on the order of 58 acres. The fourth pond was not included in the Revised RoWD. The accurate size, number, and uses must be included in the RoWD.

b. The January 12, 2009 letter requested a "description of the manner in which liquid and solid wastes (wastewater and soil) are handled and disposed..." The Revised RoWD implies that that wastewater (classified as a designated waste) used for dust control will be part of the wastewater management. The volumes, sources and application rates of this wastewater intended for dust control was not provided. A *Facilities Operation Dust Control Plan* (mentioned in Appendix G) must be submitted in the RoWD for the RoWD to be properly evaluated by Water Board staff.

Additional Deficiencies

In addition to the comments conveyed previously, Lahontan Water Board staff noted additional deficiencies in the Revised RoWD as described in the following text.

1. Heat Transfer Fluid Spills

The Revised RoWD states that HTF spills will be identified by daily inspections. The Revised RoWD does not describe how HTF spills will be identified, i.e., are these spills apparent based on visual inspection or will the use of a detection instrument be used? The Revised RoWD states that releases of more than 25 gallons of HTF fluid will be reported to the Lahontan Water Board. How will the quantity of the release be estimated? What are the emergency response plans in the event of rupture on the Western Garlock fault strand, which bisects the site? Such an event could result in releases from containment structures and piping.

2. HTF Spill Staging Area

Describe the staging area where HTF contaminated soils will be temporarily stored. Specifically, where will the staging area be located, what is its size, what are the design



specifications for the underlying liner, will the staging area be bermed, will there be secondary containment, and how will runoff from the staging area be controlled?

3. Regional Geology in the Area of the Project Site

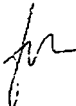
The legend for Figure 5 is incomplete. Please include a legend for the geologic units.

4. State Water Resources Control Board (State Water Board) Resolution 75-58

The Applicant is proposing the use of high quality groundwater for power plant construction and power plant cooling. State Water Board Resolution 75-58, Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling states that fresh inland waters should only be used for power plant cooling if other sources of water or other methods of cooling would be environmentally undesirable or economically unsound. The Revised RoWD does not demonstrate that accessing and using a source of lower quality water is environmentally undesirable or economically unsound. An evaluation of the use of lower quality must be submitted to the Lahontan Water Board.

We look forward to expediting your project while assuring that the beneficial uses of the State's water are protected. If you have any questions or comments, please contact me directly at (530) 542-5574 or RBooth@waterboards.ca.gov.



 Richard W. Booth, PG, CHG
Senior Engineering Geologist

cc: Kenneth Stein – NextEra Energy LLC
Eric Solorio – California Energy Commission
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**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
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APPLICATION FOR CERTIFICATION
For the *BEACON SOLAR ENERGY*
PROJECT

Docket No. 08-AFC-2

PROOF OF SERVICE

(Revised 4/28/09)

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DECLARATION OF SERVICE

I, Teraja` Golston, declare that on May 15, 2009, I served and filed copies of the attached Beacon Energy (08-AFC-2) Lahontan Region WQCB Comments on PSA . The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: **[www.energy.ca.gov/sitingcases/beacon]**. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

FOR SERVICE TO ALL OTHER PARTIES:

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

 x by personal delivery or by depositing in the United States mail at _____ with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

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

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1516 Ninth Street, MS-4

Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

Original Signature in Dockets
Teraja` Golston