

State Water Resources Control Board

TO: State and Federal Agency Executives of the
Desert Renewable Energy Conservation Plan
California Energy Commission
Dockets Office, MS-4
Docket No. 09-RENEW EO-01
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California Energy Commission

DOCKETED
09-RENEW EO-1

TN 75154

FEB 23 2015

FROM: 
Bill Orme
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DIVISION OF WATER QUALITY

DATE: FEB 23 2015

SUBJECT: INFORMAL COMMENTS/SUGGESTIONS REGARDING THE DRAFT DESERT
RENEWABLE ENERGY CONSERVATION PLAN ENVIRONMENTAL IMPACT
REPORT/ENVIRONMENTAL IMPACT STATEMENT ISSUED SEPTEMBER
2014 (DOCKET NO. 09-RENEW EO-01)

Staff from the State Water Resources Control Board (State Water Board) Division of Water Quality and Lahontan Regional Water Quality Control Board (Regional Water Board) have reviewed the Draft Desert Renewable Energy Conservation Plan (DRECP) Environmental Impact Report/Environmental Impact Statement (EIR/EIS) issued September 2014 and have provided fifty-six comments in the attached DRECP EIR/EIS Comment form.

Thank you for the opportunity to comment on the DRECP EIR/EIS. If you have any questions regarding these comments please contact Bob Solecki at (916) 341-5483, robert.solecki@waterboards.ca.gov. You may also contact Bill Orme at (916) 341-5464, Bill.Orme@waterboards.ca.gov.

Attachment: Water Board Comments on DRECP EIR/EIS 20150223

cc: via email distribution only (continued on next page)

cc: via email distribution only (continued)

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Draft Desert Renewable Energy Conservation Plan (DRECP) and Environmental Impact Report/Environmental Impact Statement (EIR/EIS)

Comment Form

Commenter: Robert Solecki, State Water Resources Control Board.

Contact Information: Robert.Solecki@waterboards.ca.gov, 916.341.5483. When submitting comments on the Draft DRECP and EIR/EIS, please include the name and means of contact for a person who would be available for later consultation if necessary. Please note that public comments and information submitted will be available for public review at www.drecp.org. Before including your address, phone number, email address, or other personal identifying information in your comment, be aware that any information submitted as part of your comment will become part of the public record. Additionally, this information may become available via Google, Yahoo, and any other internet search engines. You may choose to withhold contact information, but the agencies will not be able to consult with you if clarification of your comment is needed. While you may request in your comment to withhold your personal identifying information from public review, agencies cannot guarantee the ability to do so.

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1		Executive Summary	1.2	14	First bullet under "Biological Goals"	One of the Biological Goals is to locate renewable energy development analyzed in the Desert Renewable Energy Conservation Plan (DRECP) on disturbed lands with "low biological conflict", to the extent feasible. Please note that areas of low biological conflict may still include areas with ground and surface water resources that provide significant beneficial uses, including ecological beneficial uses.
2		Executive Summary	2.5	23	2	The State Water Resources Control Board and Regional Water Quality Control Boards (Water Boards) should be considered one of the Approval Agencies in the DRECP,

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						otherwise, the Water Boards will not be prepared to conduct streamlined permitting for projects covered by the DRECP.
3		Executive Summary	3.5	38	1	The Cost and Funding paragraph indicates that for a project proponent to be covered under the DRECP, developers of renewable energy projects covered by the DRECP will be required to pay for compensatory mitigation. Water Board staff requests that mitigation be conducted using the watershed approach to locate mitigation within the same hydrologic area as the project. The Water Boards additionally request that mitigation be located within the boundaries of the Regional Water Board where the development primarily occurs. Compensatory mitigation is required for both biological impacts as well as hydrological impacts to waters of the state under current permitting regulations.
4		Executive Summary	5	20	2 nd bullet	The second bullet point in Section 5, discusses how project proponents will be able to fulfill most or all compensation requirements by payment of an implementation fee, though it is not clear who, how, or when work will be performed to ensure no net loss of waters of the state. At this time, there are limited in-lieu fee programs that could be used toward aquatic resource restoration projects in the Lahontan region. As stated earlier (Comment 3), mitigation should be conducted using the watershed approach to locate mitigation within the same hydrologic area as the project., The Water Boards additionally request that mitigation be located within the boundaries of the Regional Water Board where the development primarily occurs.
5	I	1	1.4.1. 1.2	10	1	The DRECP EIR/EIS states the Warren-Alquist Act provides that the California Energy Commission's (CEC) license to construct and operate geothermal and solar thermal facilities

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						<p>of 50 megawatts (MW) and larger replaces all applicable state and local permits. This statement would mean that the following permitting requirements apply:</p> <ol style="list-style-type: none"> 1. Geothermal and solar thermal facilities, regardless of the level of energy production, as well as wind energy facilities, that discharge to federal waters, would be required to obtain federal permits pursuant to the federal Clean Water Act (CWA). Because the issuance of CWA permits has been delegated to the Water Boards, or the federal permit requires authorization by the Water Boards under the CWA, project proponents would be required to obtain permits through the Water Boards pursuant to CWA. 2. Geothermal and solar thermal facilities that are less than 50 MW, as well as wind energy facilities, that discharge to non-federal waters would be required to obtain permits from the Water Boards pursuant to the Porter-Cologne Water Quality Control Act. <p>Project activities requiring permits may include:</p> <ol style="list-style-type: none"> 1. Land disturbance of more than 1 acre may require a Clean Water Act (CWA), section 402(p) storm water permit, including a National Pollutant Discharge Elimination System (NPDES) General Construction Storm Water Permit, Water Quality Order (WQO) 2009-0009-DWQ, obtained from the State Water Board, or an individual storm water permit obtained

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						<p>from the Regional Water Board;</p> <ol style="list-style-type: none"> 2. Water diversion and/or dewatering activities may be subject to discharge and monitoring requirements under either NPDES General Permit, Limited Threat Discharges to Surface Waters, Board Order R6T-2014-0049, or General Waste Discharge Requirements for Discharges to Land with a Low Threat To Water Quality, WQO-2003-0003, both issued by the Regional Water Board; and 3. Discharge of fill material and/or activities resulting in hydromodification to a surface water may require a CWA, section 401 water quality certification for impacts to federal waters (waters of the United States [U.S.]), or dredge and fill waste discharge requirements (WDRs) for impacts to non-federal waters, both issued by the Regional Water Board. <p>For geothermal and solar thermal projects of 50 MW and greater that discharge to non-federal waters (as determined by the United States Army Corps of Engineers (Corps)), CEC should consult with the Water Boards to develop appropriate conditions, best management practices (BMPs), and mitigation measures that would adequately protect water quality. At a minimum, the Water Boards expect that project proponents will first avoid and/or minimize impacts to waters of the state, and then provide appropriate mitigation for unavoidable impacts as specified in Comments 3 and 4.</p>

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6	II	3	3.1.2. 5.2	33-34	See comment	<p>Standard Practices for Hydrology and Water Resources should include post-construction storm water management and BMPs that effectively treat post-construction storm water runoff. Water Board staff encourage the use of energy dissipaters in support of “<i>Low Impact Development</i>” (LID). The foremost method of reducing impacts to watersheds from development is LID, the goals of which are to maintain a landscape hydrology equivalent to predevelopment hydrologic conditions and to minimize generation of non-point source pollutants. LID results in greater infiltration, less surface runoff and potentially less impacts to receiving waters, the principles of which include: maintaining natural drainage paths and landscape features to slow and filter runoff and maximize groundwater recharge; managing runoff as close to the source as possible; and maintaining vegetated areas for storm water management and onsite filtration.</p> <p>Vegetation clearing within 100 feet of surface water channels, including dryland systems, should be kept to a minimum and, where feasible, existing vegetation should be mowed so that vegetation can reestablish more readily following the completion of construction and help mitigate for potential storm water impacts.</p> <p>Construction staging areas should be sited in designated areas at a minimum of 100 feet from surface water channels and associated floodways. An adequate combination of BMPs must be used to prevent unauthorized non-storm water discharges from the site and to stabilize soils from erosion. Construction equipment should use existing roadways to the</p>

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						extent feasible. All temporary impacted areas should be restored (recontoured, decompacted, and revegetated) to pre-project conditions.
7	II	3	3.1.2. 5.2	34	5 th Bullet	<p>The 5th Bullet under “<i>Standard Practices for Hydrology and Water Resources, AM-PW-9: ...</i>” states “<i>All Covered Activities will implement project-specific drainage erosion, and sedimentation control actions which meet the approval of the DRECP Coordination Group and the applicable regulatory agencies.</i>”</p> <p>Project managers should consult with the Water Boards when designing drainage for their projects prior to finalization of project plans. Approval of project drainage plans without consulting with the Water Boards may result in project permitting delays with the Water Boards because drainage designs for the project may need to be modified due to Water Board requirements and permit conditions.</p>
8	II	3	3.1.2. 5.2	34	5 th Bullet 7 th sub bullet	<p>Add episodic streams, dryland streams, and alluvial fan hydrologic systems to the 7th sub-bullet that states “<i>Project sites that may affect intermittent and perennial streams, swales, ephemeral washes, wetland natural communities, other DRECP water land covers, or sites occupied by aquatic Covered Species due to ground water or surface water extraction...</i>”</p> <p>In addition, add the terms episodic streams, dryland streams, and alluvial fan hydrologic systems to all discussions that address the suite of surface waters that may be impacted by</p>

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						projects under the DRECP. Projects that are constructed in the desert that are not designed to address the dynamics of these hydrologic systems can cause excessive erosion and sedimentation resulting from storm water runoff during project construction and post-construction. As a result, such projects would not be in compliance with their NPDES Construction Storm Water Permits, 401 Water Quality Certifications, and WDRs.
9	II	3	3.1.2.5.7	86 - 87	Paragraphs 2-3; COMP-1 and COMP-2 bullets and Tables II.3-13 and II.3-14	Compensation requirements for biological resources are described in the section with a standard compensatory mitigation ratio. However, all permanent impacts to waters of the state must be mitigated to ensure no net loss of aquatic resources or degradation of water quality. In determining appropriate mitigation ratios for impacts to waters of the state, Water Board staff considers Basin Plan requirements (minimum 1.5 to 1 mitigation ratios for impacts to wetlands) and utilizes <i>12501-SPD Regulatory Program Standard Operating Procedure for Determination of Mitigation Ratios</i> , published December 2012 by the Corps, South Pacific Division. Please note, the minimum acceptable mitigation ratio for impacts to wetlands in the Lahontan region is 1.5 to 1 or higher .
10	II	3	3.1.4.1	172-173	See comment	In addition to Comments 5 and 6 above, should waste discharged to ponds be characterized as a “designated” waste pursuant to California Water Code, section 13173, then compliance with the appropriate requirements of California Code of Regulations (CCR), title 27, may be required. Early consultation with Water Board staff will facilitate any required permitting.

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11	II	3	Table II.3-21	174	4 th row	There is a note stating “Activities associated with groundwater usage are not considered Covered Activities under the DRECP”. Yet groundwater potential usage and problems are discussed in chapter II.3, II.6 IV.6. This note is unclear. Please clarify this note.
12	II	3	3.1.5.2.4	218	3	The State Water Resources Control Board should be included on the Public Agency Working Group list.
13	II	3	3.2.3.9.2	405	2 nd hollow bullet	The following statement is too vague: “The impacts are minimal (e.g., impact less than 5% of the mapped resource within the project ROW) or can be adequately mitigated: and...”. Five percent of mapped groundwater resources is an incomplete statement. Staff cannot tell if this statement means total storage or total usable groundwater of the perennial yield, and if other users already use 90% of the usable groundwater. Therefore, staff cannot evaluate if a threshold of 5% is minimal.
14	II	3	3.2.3.9.2	409	Last bullet	A Groundwater Monitoring Plan should not only include measuring groundwater surface elevation but should also include measuring groundwater quality, which may deteriorate in many areas as groundwater levels drop and older water is extracted.
15	II	3	3	273, 409	See comment	Regarding discussions on “Risk Assessment”, “Preventative Measures”, and “Planned Response”, discuss the baseline conditions of groundwater and the appropriate responses required if a substantial change in hydrology or lowering of the water table occurs. Water Board staff request that specific metrics be used for defining a “substantial change” that would require a response. For example, if the groundwater levels drop a certain percentage from an established baseline or a certain number of feet over a period of one year, then

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						appropriate response measures would be implemented. Specific metrics for defining a substantial change in water quality (physical and chemical parameters) should also be developed with appropriate response requirements should the project(s) cause the thresholds of significance to be exceeded.
16	II	3	3.2.3.5.2	387	See comment	<p>Under the heading <i>“Water Quality”</i>, add <i>“Porter-Cologne Water Quality Control Act”</i> to the sentence that reads, <i>“Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California State standards, as indicated by...”</i></p> <p>Add <i>“Porter-Cologne Water Quality Control Act”</i> to all sentences throughout the DRECP where the CWA is mentioned. The Water Boards issue permits for projects in the desert regions of California that impact surface and groundwater resources that are frequently not under federal jurisdiction.</p> <p>In addition, add the Sustainable Groundwater Management Act (SGMA) to sentences throughout the DRECP where the CWA is mentioned. The SGMA creates new authorities for agencies that become Groundwater Sustainability Agencies, including the ability to regulate the amount of water that an individual may extract.</p>
17	II	3	3.2.3.5.2	387-389	See Comment	In the discussion regarding Guidelines for grazing in the California Desert Conservation Area (CDCA), please make reference to Table II.3-6 – <i>“Riparian and Wetland Avoidance</i>

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						<i>and Setbacks</i> ”, in Section II.3.1.2.5.4 of page 48 of the DRECP. The table provides specific setback and avoidance distances.
18	II	3	3.2.3.9	402	2-4	In the second paragraph that begins “ <i>Usage of surface water and groundwater resources is primarily governed by California state water law...</i> ”, Please include a sentence indicating that the Porter-Cologne Water Quality Control Act protects and regulates the water quality of all waters of the state of California. In addition, please include the Porter-Cologne Water Quality Control Act in the third and fourth paragraph of page 402.
19	II	3	3.2.3.9.1	403	6 th bullet	Under the heading “ <i>Surface Water Resources</i> ”, please include a bullet addressing episodic streams, dryland streams, and alluvial fan hydrologic systems. These hydrologic systems should be identified, and strategies to avoid and minimize impacts to these systems should be outlined by the EIR/EIS as discussed in Comment 8 above.
20	II	3	3.2.3.9.2	406	2 nd bullet	Under the heading “ <i>Surface Water</i> ”, it should be made clear in the EIR/EIS that all surface waters are waters of the state. Some waters of the state are also waters of the U.S., while other waters of the state are isolated and not identified as waters of the U.S by the Corps. Section 404 and 401 of the CWA apply only to those waters of the state that are also waters of the U.S. However, many of the surface waters in the Mojave Desert and throughout the DRECP planning area are not waters of the U.S., and therefore, not subject to regulation under the CWA. For waters not subject to CWA regulation, the Water Board regulates the discharge of dredge or fill material and other wastes in accordance with the Porter-Cologne Water Quality Control Act. This bullet should be

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						revised to read: <i>“Section 404 and 401 of the CWA will be complied with for all surface waters within the proposed ROW that have been or will likely be determined to be jurisdictional waters of the U.S. For all surface waters within the proposed ROW not subject to the CWA, compliance with applicable sections of the Porter-Cologne Water Quality Control Act is required.”</i>
21	II	3	3.2.3.9.2	406	2 nd and 3 rd bullets	Under the heading “Surface Water”, please include the “Porter-Cologne Water Quality Control Act” where there are discussions regarding the Clean Water Act. Please insert an additional bullet point that indicates, Porter-Cologne Water Quality Control Act will be complied with for dry washes within the proposed ROW regardless of whether they are determined to be waters under federal jurisdiction.
22	II	3	3.2.3.9.2	410		A paragraph should be added about the groundwater quality “trigger point” (e.g., for Total Dissolved Solids). After the “trigger point” is reached, pumping mitigation may be imposed. Pumping mitigation may involve reduced pumping or cessation of pumping. In most areas of the desert, deeper, older groundwater is saline. Excessive pumping will likely cause migration of saline water into fresh water aquifers.
23	III	5	5.1.2.3	7	2-3	Under the Porter–Cologne Water Quality Control Act, “waters of the state” includes both surface and groundwater. This section should clarify this by citing the definition of waters of the state under Porter-Cologne: i.e., “Any surface water or groundwater, including saline waters, within boundaries of the state” (California Water Code §13050(e)). In order to understand the Water Board’s jurisdiction under Porter Cologne, the following key facts should be noted:

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						<ul style="list-style-type: none"> • All waters of the U.S.(e.g. federal waters) are also waters of the state. • All non-federal waters are also waters of the state. • All waters of the state are protected and regulated under Porter-Cologne. <p>It is important to note that, in general, there are two regulatory pathways available for any projects or activities that would cause a discharge of dredged or fill material to waters of the state (i.e., any activity which fills, excavates, alters or causes any potential impact to water quality). For activities affecting waters of the U.S. that are subject to a federal permit or license (typically a CWA section 404 permit from the U.S. Army Corps of Engineers), a CWA section 401 water quality certification is required from the Water Boards. This is the first pathway. The second pathway is for other point source discharges to a federal waters that does not require the submission of an application for a federal permit or license, or discharges that affect non-federal waters. For these discharges, a “report of waste discharge” is required, and waste discharge requirements (WDRs) must be obtained from the Water Boards prior to starting the activities.</p> <p>Projects which may affect more than one Regional Water Board would apply for a water quality certification or WDRs from the State Water Board’s Division of Water Quality.</p> <p>However, as noted in Comment 5, the DRECP EIR/EIS states the Warren-Alquist Act provides that the CEC’s license to</p>

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						construct and operate geothermal and solar thermal facilities of 50 MW and larger replaces all applicable state and local permits. Nonetheless, geothermal and solar thermal facilities, regardless of the level of energy production, that discharge to federal waters, would still be required to obtain federal permits and authorizations through the Water Board pursuant to the federal CWA. These projects would fall into pathway one noted above. Geothermal and solar thermal facilities that are less than 50 MW that discharge to non-federal waters would be required to obtain permits from the Water Boards pursuant to the Porter-Cologne Water Quality Control Act and would fall into pathway two noted above.
24	III	5	5.1.2.3	7	2	Staff recommend conducting the following edits to Section III.5.1.2.3: <i>The Lahontan and Colorado River RWQCBs have jurisdictions within the Plan Area. Each has a <u>Regional Water Quality Control Plan</u> water quality control plan, also <u>commonly</u> referred to as a “Basin Plan.” basin plan. A basin plan establishes The Basin Plans establish water quality standards for both surface water and groundwater. These standards include designated beneficial uses as well as narrative and numerical objectives, which must be both attained and maintained. Under both state and federal law there are additional antidegradation policies that protect high-quality waters and limit degradation even where water quality exceeds standards.</i>

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						<p>Staff note that, as with many CEQA documents, the DRECP Draft EIR/EIS cites these Basin Plan requirements but fails to analyze how the DRECP would incorporate these requirements in proposed projects, and how those projects would mitigate for potential violations of these requirements. Staff recommend that the Final EIR/EIS provide analysis of potential project impacts that may cause Basin Plan requirements to be violated. The potential project impacts to beneficial uses and water quality should be identified, and strategies proposed to first avoid, then minimize and finally mitigate any unavoidable impacts.</p> <p>The Final EIR/EIS, as a first tier CEQA/NEPA document, should also lay the groundwork for analysis of all Basin Plan requirements by proposing strategies to avoid and minimize potential impacts, and describing feasible mitigation for all impacts that would violate Basin Plan standards and requirements in any 2nd tier project-specific analyses that may follow.</p> <p>Staff note that performing this analysis during the CEQA process would facilitate subsequent permitting processes with the Water Boards.</p> <p>In addition, see comments on section III.5.4 regarding mapping of watersheds.</p>
25	III	5	5.2	8	1	The information on desert streams that is cited below should incorporate the concept of <i>episodic flows</i> more clearly; the

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						<p>concept of ephemeral flow as introduced below is insufficient to describe and plan for desert stream hydrology. Staff recommend reference to Stein, et al., 2010,¹ as a starting point for this analysis. A report on this topic, prepared at the behest of the California Energy Commission, should also be consulted: See Brady, et al., 2014.² Staff also recommend Vyverberg, 2010 (cited in section III.25 of the Draft EIR/EIS).³</p> <p>Section III.5.4.1 begins to address this important concept, but it should be incorporated into all pertinent parts of the DEIR.</p> <p>The third sentence in Section III.5.2 states: <i>Stream channels are typically ephemeral and formed by flash runoff events; these conditions have created various channel forms including alluvial fans, compound (braided) channels, discontinuous ephemeral (transient or short-lived) channels, and single-thread channels with floodplains (Lichvar, R.W. and S.M. McColley 2008, CDFG 2010).</i></p>

¹ Stein, Eric. D., Kris Vyverberg, G. Mathias Kondolf, and Kelly Janes. 2011. *Episodic Stream Channels: Imperatives for Assessment and Environmental Planning in California – Proceedings of a Special Technical Workshop, Nov. 8-10, 2010*. Technical report by California State Water Resources Control Board – Surface Water Ambient Monitoring Program; Southern California Coastal Water Research Project (SCCWRP) Technical Report #0645. ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/645_EpisodicStreamsWorkshop.pdf

² Brady, Roland H. III, Kris Vyverberg. 2014. *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants*. California Energy Commission. Publication Number: CEC-500-2014-013. (note that the document as posted on the CEC website is dated Feb., 2014.) <http://www.energy.ca.gov/2014publications/CEC-500-2014-013/CEC-500-2014-013.pdf>

³ Vyverberg, Kris. 2010. *A Review of Stream Processes and Forms in Dryland Streams*. California Department of Fish and Game (now Department of Fish and Wildlife), Dec. 2010

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26	III	5	5.4.1, 5.5.1, 5.5.2 & 5.5.2.1	17, 24-28	See comment	<p>III.5.4.1 Characterization of Perennial, Intermittent, and Ephemeral Streams</p> <p>Maps provided in Figures III.5-1 through III.5-4 provide good depictions of the DRECP area's streams and wetlands. However, these maps fail to incorporate Basin Planning hydrologic units and regional water quality control board boundaries which would clarify Water Board jurisdictional boundaries and planning units.</p> <p>Discussions on streams and wetlands throughout the DRECP focus on habitat values, with limited discussion on the other functions and values that surface waters, including wetlands, provide. This section, however, does highlight other functions and values that surface waters provide (see citation below). This characterization of surface waters should be included in all DRECP sections describing surface waters. The third paragraph of Section III.5.4.1, cited below, is a good example of a discussion on how the streams and wetlands of the DRECP area have many functions and values beyond habitat values.</p> <p>The third paragraph of Section III.5.4.1 states:</p> <p><i>Episodic streams provide numerous ecosystem services including watershed and landscape hydrologic connections, water supply protection and water-quality filtering, wildlife habitat and movement/migration corridors, sediment transport, storage and deposition, groundwater recharge and</i></p>

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						<p><i>discharge, vegetation community support, and nutrient cycling and movement.</i></p> <p>In section III.5.5, <i>Protecting the Water Quality and Beneficial Uses of Plan Area Waters</i>, there are discussions on <i>Beneficial Uses, Water Quality Objectives and Effluent Limitations</i>, and <i>Methodology for Establishing Water Quality Objectives</i>, respectively. These sections describe the Basin Plan elements, but provide no analysis of how DRECP projects might affect the listed beneficial uses or meet, or fail to meet, water quality objectives. The list of beneficial uses provided in Table III.5.2 cannot be understood without the context of the designations of beneficial uses for basin planning units. Basin Planning hydrologic units are mapped in the Basin Plans. These units are analogous to, but not the same as, USGS Hydrologic Units, and do not match USGS Hydrologic Unit Codes (or "HUCs").</p>
27	III	6	6.2.1	7	2	The statement that water may be transferred between basins/users to operate a project is speculation. If drought conditions persist, there may not be enough water for all users even if the basin becomes adjudicated. When the perennial yield decreases, the sum of all allowances will decrease as well and adjudicated volumes may be revised downward.
28	III	6	6.2.3	26	2	The following statement is incomplete: "Data are not available, however, to calculate these flows and determine their relative significance to the Colorado River Aquifer groundwater budget." The EIR needs to better describe how these flows would be calculated to determine their relative significance to

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						the Colorado River Aquifer groundwater budget.
29	III	6	6.3.3. 2	36	4	Within footnote ² , delete one CDWRC from “CDWRCDWR...”
30	III	6	6.3.3. 2	42	1	The discussion about potentially substantial recharge is speculation and cannot be a basis for estimating the amount of groundwater available for the DRECP. The Plan Area is within the Basins and Ranges hydrologic province, which is a closed system. Little groundwater or surface water exchange with an outside province(s) is taking place. Any inflow/outflow is very slow. According to the USGS-GAMA groundwater studies for this area, 65% of groundwater is between 100 and 33,000 years old, and 21% is >11,000 years old. The only young (recently recharged) groundwater is in proximity of the Sierra Nevada, San Bernardino, San Gabriel, and San Jacinto mountain ranges. The assumption that other basins have significantly higher recharge by comparing them with Danskin’s study for Owens Valley is speculation, and, if valid, would only be for an area in close proximity to the mountain ranges. Even in the Owens Valley (based on USGS-GAMA study) over 50% of the wells contain water over 100 years old. Almost all of the wells along Owens Valley to Owens Lake contain water that is between 4,000 and 33,000 years old.
31	III	6	6.3.3. 3	46	2	The regional carbonate aquifer originates in Utah and Nevada. Groundwater age in this aquifer, according to several studies on Yucca Mountain, is between 10,000 to 30,000 years old and probably originated from the glacial period. Pumping from this aquifer would result in decreased water level and could cause springs and surface lakes/ponds in the Amargosa Valley to become dry.

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32	III	6	6.3.4. 2	58	4	Although the potential for inducing downward flow to geothermal wells from overlying water-supply aquifers is low, the most probable source of geothermal water is percolation from the upper aquifers. Increased pumping from geothermal wells will increase percolation or the geothermal wells will become dry. This will require injection of additional water into geothermal wells, as is performed in geothermal fields in northern California.
33	III	6	6.3.5. 1	63 - 64	4	The paragraph discussing the Cadiz Valley and Chocolate Mountains ecoregion should have its own subchapter title. The paragraphs discussing the other ecoregions also should have their own subchapter titles.
34	III	6	6.3.5	64-91	See comment	In the description of each ecoregion there is a general paragraph which states: <i>“The regional average annual precipitation recharge estimate for the XXXXX valley ecoregion subarea is less than XXXX acre-feet/year (Figure III 6-X). This number is the total for areas within the ecoregion subarea, including mountain block areas between groundwater basins. However, the recharge estimate is a minimum value because it excludes potential irrigation return flows and rainfall in watershed areas located outside the Plan Area. The runoff from these outside watershed areas may generate substantial amounts of additional recharge as either percolating runoff or subsurface inflow.”</i>

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						<p>These statements are speculative. First, there is little knowledge about underflow between ecoregions and even less about inflow-outflow from outside of the Plan Area. Second, inflow-outflow between ecoregions does not increase groundwater volume available within the Plan Area; inflow to one ecoregion will increase groundwater volume in that ecoregion but will decrease groundwater volume in the other ecoregion at the same time.</p> <p>Inflow from outside of the Plan Area is unlikely. If inflow does occur, it will be negligible because the Plan Area is within the Basins and Ranges hydrological province. Groundwater within the Plan Area is predominantly old (i.e. not affected by a recent recharge, except for areas adjacent to the mountain ranges). The majority of the stored groundwater is old and saline and originated from recharge that occurred thousands of years ago, probably after the glacial melt. In most of the significant basins, groundwater levels have dropped due to overdraft conditions. This indicates that groundwater is mined with inadequate recharge except near the mountain ranges. The high salinity and old age of groundwater prevailing in the Plan Area do not support the statement that the Department of Water Resources estimate of recharge is at a <i>“minimum value”</i>, and that <i>“irrigation return flows and rainfall in watershed area located outside the Plan Area may generate substantial amounts of additional recharge”</i>.</p>
35	IV	4	4.3.1.1.1	12	See comment	Text under the “Laws and Regulations” heading states: <i>“Existing laws and regulations would reduce the impacts of renewable energy development projects in the absence of the DRECP”</i> .

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						<p>And the last bullet of this page states, “<i>In addition, Appendix J of the California Business Code requires that county grading permits be obtained for appropriate management of on-site drainage and erosion control.</i>”</p> <p>We assume the intended meaning here is: “Agency regulatory permitting actions under existing laws should condition actions so that impacts are reduced.” If that is not the case, clarification of this statement should be provided. Note that reliance on subsequent agency permitting is not sufficient as a mitigation measure.</p>
36	IV	4	4.3.2.1.1	27	2 nd bullet	<p>Suggested changes to AM-PW-9:</p> <p>Suggested new text is <u>underlined</u>. “<i>Identify site-specific surface water runoff patterns and develop measures to <u>maintain surface water runoff and groundwater infiltration patterns</u>, prevent excessive erosion, reduce amount of area covered by impervious surfaces, and conduct regular inspections of erosion control structures. Design the project to minimize site disturbance during construction, operation, and decommissioning. <u>Require application of LID principles for all impervious surfaces.</u></i>”</p>
37	IV	5	5.2.1	6	See comment	<p>Staff request that natural drainage patterns be maintained and stream channels be clear-spanned to the extent practical to avoid and minimize impacts. Impacts to these surface waters</p>

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						<p>should be avoided by micro-siting project components in areas outside the drainage channels. Staff understand that access roads and underground utilities are often co-located with generation-tie lines. Should it be necessary to place roadways, underground utilities, power poles or other infrastructure within a streambed or other surface water,, compensatory mitigation will be required.</p> <p>Staff request that construction staging areas be sited in designated areas outside of any waterways, including ephemeral channels. An adequate combination of BMPs must be used to prevent unauthorized non-storm water discharges from the site and to stabilize soils from erosion. Construction equipment should use existing roadways to the extent feasible.</p> <p>Water Board staff encourage development on previously disturbed lands, including former agricultural farm lands and in urban areas. Such reuse of these lands benefits environmental resources, including hydrology and water quality, by preserving relatively undisturbed desert areas.</p>
38	IV	5	5.2.1	6	4	<p>While wind energy turbine pads may be relatively smaller than solar panels, construction and installation creates disturbance over the entire site and creates additional impervious surfaces. The increased velocity of runoff from these impervious surfaces must be managed with LID strategies, to the extent feasible, to prevent hydromodification and help sustain a healthy watershed.</p>
39	IV	6	All	All	All	<p>General comment: Extensive development of solar and/or geothermal energy will require a large volume of water supply</p>

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						which is not readily available in a desert environment. Existing sources are already developed and many aquifers are under overdraft or stressed conditions. Extracting an additional 100,000 AF/Y of groundwater will make the situation worse. USGS-GAMA studies indicate that the majority of groundwater in the Basins and Ranges hydrologic province is thousands of years old (i.e., it takes thousands of years for groundwater to travel from the point of recharge to the point discharge (well)). Only small areas adjacent to the mountains are recharged directly by rainfall or snowmelt, and this groundwater is already developed. Even if there is younger groundwater within the aquifer, it occurs in a relatively thin layer on top of the older groundwater, and the older groundwater quality becomes worse with depth. The EIR/EIS should address the likelihood that eventually large scale development will require an outside source of water, or water treatment and recycling, instead of groundwater mining.
40	IV	6	All	All	All	Water Board staff encourage specific metrics be used for defining a “ <i>substantial change</i> ” that would elicit a response. For example, if the groundwater levels drop 10% from baseline over the period of one year, then appropriate response measures would be implemented (see Comment 15).
41	IV	6	6.1.2	5	See comment	Paragraph (f) located after (a) and (b) - should be moved after (e) or rename all of them.
42	IV	6	6.3.1.1	11	4	Table IV.6-1: MW1 and (AFY)2 – “1” and “2” should be in superscript (i.e., MW ¹ and AFY ²).
43	IV	6	6.3.1.	12-25	See	Regarding <i>Impacts and Mitigation for Renewable Energy and</i>

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			1.1 – 6.3.2. 1.1		comment	<i>Transmission Development in No Action Alternative</i> , Impacts GW-1, 2, 3 and 4 pertain to groundwater recharge, which is a significant beneficial use of surface waters identified for Basin Planning units in the DRECP by the Lahontan and Colorado River Basin Regional Water Boards. The narrative in the descriptions of potential impacts and proposed mitigations, including discussion of the action of regulatory agencies, should acknowledge that the discussion pertains to groundwater recharge. Potential impacts and proposed mitigations pertaining to all relevant Basin Plan hydrologic units should also be included in each alternative of the Draft EIR/EIS.
44	IV	6	6.3.1. 1.1	13, 20, 26, 39, 50, 69, 83, 93	2	For Impact GW-2, add “and groundwater quality” to this and other GW-2 impacts in the text. Groundwater quality deteriorates with depth as water becomes older and concentrations of Total Dissolved Solids and trace elements increase.
45	IV	6	6.3.2. 11	30	See comment	Figure IV.6-2- estimated Solar and Geothermal water use is not shown in the map.
46	IV	6	6.3.2. 7.1	46	5	In regard to the sentence, “ <i>Further, the hydraulic connection between groundwater in the alluvial basin and deep groundwater in the regional carbonate aquifer system (and their relative contributions to Amargosa River flows and spring flows) is not understood.</i> ”, there is an extensive study on groundwater conditions in the Amargosa River Valley, including studies conducted on alluvial, volcanic, and carbonate aquifers for the Yucca Mountain proposed radioactive repository.

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47	IV	6	6.3.3.1.1	54	See comment	In regard to Fig. IV.6-4, estimated Solar and Geothermal water use is not shown in the map.
48	IV	25	25.3.4	38 – 39	See comment	In regard to Impact SG-2, soil erosion due to increased impervious surfaces should be considered as part of the cumulative impact analysis.
49	IV	25	25.3.6	45	2	Impact GW-1 discusses installation of pervious surfaces. Water Board staff encourage the use of LID (see Comment 6).
50	IV	25	25.3.6	48	2	Impact GW-6 indicates that impacts to groundwater could only occur if two or more projects spilled at the same time. Water Board staff strongly disagrees with this statement. Impacts to groundwater from a single project and a single spill can occur if not remediated appropriately. As such, preventative measures and monitoring and reporting systems are exceedingly important to determine at the earliest possible time if project impacts have inadvertently impacted water quality. Should a spill of hazardous substance or sewage occur, the incident must be reported to the State Office of Emergency Services (OES), per California Water Code, section 13271 et seq. In addition, such spills should also be reported to the Regional Water Board, as appropriate, and as required by WDRs or other Water Board permits. Further information regarding reporting of spills and releases can be found at the following website: http://www.waterboards.ca.gov/lahontan
51	IV	25	25.3.7	All	All	In regard to IV.25.3.7 Biological Resources, the description of cumulative impacts to wetlands and jurisdictional waters focuses on habitat impacts but does not acknowledge the beneficial uses of waters of the state associated with habitat functions. The description does not clearly cover all beneficial uses of waters. Analysis of impacts to “jurisdictional waters”

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						(i.e., all waters of the state, including federal waters) should describe all impacts in the context of the designated beneficial uses of those waters.
52	IV	25	25.3.7	53-54	See comment	Impact BR-2 does not clearly account for impacts to dry washes. It was previously stated that all riparian areas would be avoided, but no definition of riparian was provided, and it is not clear if effects to riparian areas in dry wash systems are considered in the analysis. How will dry washes be protected? How will impacts to dry washes be categorized and mitigated?
53	IV	25	25.3.7	53-54	See comment	<p>Impact BR-2: <i>Siting, construction, decommissioning, and operational activities would result in adverse effects to jurisdictional waters and wetlands.</i></p> <p>Discussion of this impact mentions “jurisdictional waters,” but seems to misstate the extent of jurisdictional waters in the DRECP area. The discussion notes that “major rivers” would be avoided, but makes no reference to smaller ephemeral streams, episodic streams, dry washes, and alluvial fans. As previously stated, Water Board jurisdiction under the Porter-Cologne Act extends to all surface waters, including wetlands, and therefore is broader than federal jurisdiction under the CWA.</p> <p>For all DRECP alternatives, descriptions of Impact BR-2 should clearly include discussions of all potential effects to all classes of waters that may be impacted by DRECP projects. The discussion in Impact BR-2 only includes wetlands and</p>

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54	IV	25	25.3. 7	76	4	<p>No means of actually analyzing or measuring cumulative effects is described in Impact BR-2. No substantial evidence is provided to support the conclusion that the proposed action alternatives are not expected to result in considerable contributions to the Plan Area cumulative effects.</p> <p>Groundwater and surface water resources may need additional analysis for cumulative effects in light of the comments above. The Draft EIR/EIS needs to describe how the cumulative effects are analyzed and measured, and how the conclusion was determined.</p>
55	IV	25	25.3. 7	102	1-4	<p>Impact LG-1: Alternative would result in loss of livestock grazing acres.</p> <p>This impact describes loss of grazing capacity by describing lost acres. Impacts to grazing cannot be assessed without the context of the permitted Animal Unit Months (AUMs) on those acres. This concern is pertinent to water quality because range condition and productivity are a function of range management, <u>but also</u> a driver of non-point source pollution in receiving waters. Alteration of grazing patterns driven by DRECP projects can have effects on water quality. <u>These effects cannot be measured by simple acres.</u> A full suite of range management and watershed assessment methods must be employed to understand this complex problem.</p>

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56	VI	Mitigation Monitoring and Reporting Plan	2	2	4	Regarding monitoring, assessment, and reporting procedures, the MMCRP, VI.2, acknowledges that many <i>agencies have considerable leeway in how they go about this</i> . The DRECP at a program level should require that consistent monitoring, assessment, reporting procedures, and methods be developed and implemented for all DRECP projects. Without some comprehensive programmatic approach to monitoring and reporting of mitigation compliance, assessment of programmatic compliance would be difficult and unduly burdensome for the DRECP proponents.

To submit comments, please deliver or send them to the following:

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U.S. Mail or Other Delivery Address:

California Energy Commission
Dockets Office, MS-4
Docket No. 09-RENEW EO-01
1516 Ninth Street
Sacramento, CA 95814-5512

When submitting comments via e-mail, please use either Microsoft Word format or Portable Document Format (PDF). Please also include "DRECP NEPA/CEQA" in the subject line or your email comment or first paragraph of your mail comment.