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July 27, 2012

Mr. Oscar Biondi
State Water Resources Control Board
Division of Water Rights
P.O. Box 2000
Sacramento, CA 98512-2000

Re: Draft Water Quality Certification, Eagle Mountain Pumped Storage Project

Dear Oscar,

We sincerely appreciate that the State Water Board has issued its draft Water Quality Certification (WQC) for the Eagle Mountain Pumped Storage Project, and for the opportunity to provide comments. Our comments include suggestions for minor modifications and clarifications to specific terms for your consideration that we believe will enhance this document as clear guidance for water quality protection for the life of the project. We have several general comments presented herein, followed by specific page by page comments in the attachment.

General Comment 1: Condition 6 – Surface Water Quality

The draft WQC refers to "project waters" and contains conflicting statements regarding the applicable water quality standards that apply to project waters. Several statements within the draft WQC indicate that the water quality standard is to maintain water quality in the reservoirs equivalent to the input ground water, and to maintain the existing water quality [i.e., prevent the degradation of] ground water that may receive seepage losses from the reservoirs. Other statements in the draft WQC and Condition 6 imply that a municipal drinking water (MUN) standard may apply to the reservoirs. The Final WQC needs to be clarified for consistent reference to the correct water quality standard, which is to minimize the quantities of contaminants reaching any ground water basin and maintain existing groundwater quality. We understand project waters to include: 1) water pumped from wells in the Chuckwalla Valley; 2) that same water as it is delivered, stored, and moved back and forth between the two project reservoirs; 3) potential seepage losses to groundwater from the two project reservoirs; 4) residual brine water from the reverse

osmosis (RO) water treatment system that will be delivered to surface ponds for evaporation; and 5) incidental stormwater runoff.

The WQC states that Eagle Tank Spring is more than 3 miles from the western edge of the proposed Upper Reservoir and that it is unlikely that there are major geologic fractures connecting the reservoir to the springs over the distance separating the two features. Given the lack of hydrologic connection with Eagle Tank Spring, and the distance between the project reservoirs and the spring, we suggest that it is not necessary or useful for the Project to be required to monitor that water body. We respectfully request that the requirement to monitor Eagle Tank Spring be removed from Condition 6.

Conflicts with the U.S. Fish and Wildlife Service Biological Opinion and California Department of Fish and Game Consistency Determination.

On April 10, 2012 the U.S. Fish and Wildlife Service (Service) issued a "Formal Section 7 Opinion on the Proposed Eagle Mountain Pumped Storage Hydroelectric Project (No. 13123-002), Riverside County, California." On May 11, 2012, the California Fish and Game (CDFG) issued Consistency Determination No 2080-2012-008-06 which states that the Biological Opinion (BO) and Incidental Take Statement prepared by the U.S. Fish and Wildlife Service is consistent with the requirements of the California Endangered Species Act.

We noted several requirements of the draft WQC that conflict with the Terms and Conditions of the BO. We respectfully request that these requirements be modified to provide consistency among the regulatory agencies, and to defer to the USFWS and CDFG on matters that fall under their jurisdiction.

Condition 3 of the BO requires that the Project's fencing should contain "dips" where the fence extends below the high water mark to allow wildlife access to drinking water. The BO states that: "*Temporary and permanent exclusion fencing around the desalination ponds and reservoirs will completely enclose the facilities. No setbacks for wildlife will be included.*"; (emphasis added). It will not be possible for ECE to comply with the requirement to design the fencing to include "dips", while at the same time complying with the requirements of the BO to completely enclose the facilities with fencing.

Condition 2 of the WQC is intended for wildlife protection. We recommend that Condition 2 specifically acknowledge the USFWS BO and the State's Consistency Determination, issued by the CDFG. The desired contents of the Wildlife Plan described in Condition 2 are not specified, but could easily be clarified by simply referencing the requirements of the BO.

Scope of the Phase 1 and Phase 2 Site Investigations

The goal of the Phase 1 site investigations described in Technical Memorandum 12.1 in the Water Board's EIR is to finalize project features and design concepts, to plan the Phase 2 program to support final engineering design of the project, and to collect additional data on water quality protection associated with potential ore body contact of seepage water from the reservoirs. Condition 1 of the WQC includes sensitive species surveys in the Phase 1 studies. While we concur with the need to conduct sensitive species surveys, we recommend that these surveys not be described or categorized as a part of the Phase 1 surveys since they need to be conducted during certain specific seasons. The Phase 1 site investigations are primarily geotechnical in nature and can be conducted at any time of the year.

Nature and Timing of Approvals

Throughout the draft WQC there are requirements for the Deputy Director to "approve" a plan or report. We respectfully request that the Deputy Director's role be clarified with regard to confirmation of plans and designs having been properly completed in conformance with requirements of other applicable agencies (FERC, USFWS and CDFG for example), and distinguish those plans that apply directly to maintenance and protection of water quality that will be subject to direct approval by the State Water Board.

We are also concerned about the potential for significant project time delays resulting from the need to get Deputy Director acceptance of plans, designs, and reports. In order to facilitate project operations, and consistent with other WQC's that the State water Board has issued, we request that the following language be added to the WQC at each location where the WQC requires acceptance of the Deputy Director:

"If, within 60 days, the Deputy Director does not either act on the request for acceptance or identify the need for additional information or actions, the Plan shall be deemed accepted."

Recommendations for Clarity

In a number of places within the WQC there is language stating that the Applicant "should" undertake some action. If the action referenced is a mitigation measure applied through implementation of the Mitigation Monitoring and Reporting Plan from the Environmental Impact Report, then the action should be a requirement, rather than a recommendation. In each such case, we respectfully suggest modifying the language to use the word "shall" rather than "should".

Thank you again for this opportunity to provide comments. We look forward to continuing to work with the Water Board in completion of the WQC. Please do not hesitate to contact me at (310) 450-9090, or our Project Director, Dr. Jeff Harvey at (916) 799-6065, if you have any questions or need additional information.

Sincerely,

Stephen Lowe, President
Eagle Crest Energy Company

Attachments

cc: Dr. Jeffrey Harvey, Project Director
Ms. Ginger Gillin, Project Manager
Mr. William W. Abbott, Esq.

Attachment

Requested modifications to the Draft Water Quality Certification for the Eagle Mountain Pumped Storage Project

Bold indicates requested wording changes for clarification.

Global Changes:

- Change references from "Draft EIR" to "**Final EIR"**.
- Change all CEQA-based requirements from "should" to "**shall"**.

Page 5, ¶ 3, change to:

"Data used for characterization of the Central Project Area, which includes the area where the reservoirs and powerhouse will be located, were drawn from previous reports and observations made during the 1992 to 1994 FERC licensing process, **during the development of the proposed Eagle Mountain Landfill, and from geologic reports and technical literature prepared by others**."

Page 5, ¶ 5, change to:

"The Applicant will undertake detailed site investigations to support the final configuration and design of the Project once access to the Central Project Area is **obtained**. These detailed investigations will be conducted in **two phases, as follows**:"

Page 6, bullet 1, ¶ 2, change to:

"Phase I Site Investigations will be initiated after licensing and acquisition of site access **and after the regulatory agencies have granted approval for ground disturbing activities**."

Page 6, ¶ 1, change to:

"The site investigations will be conducted in accordance with Technical Memorandum 12.1 of the Eagle Mountain Pumped Storage Project Draft Environment Impact Report (Draft EIR), and will include analysis of the potential for acid production and metal leaching **from rocks surrounding the** proposed reservoir sites. If the Phase I or Phase II Site Investigations identify **significant** new issues not addressed in the Final EIR, the Project's environmental review document may need to be revised to address any newly discovered potential impacts and satisfy the California Environmental Quality Act (CEQA) requirements."

Page 6, last ¶, change to:
"The total water storage will be approximately 20,000 acre-feet (AF) in the Upper Reservoir and approximately 21,900 AF in the Lower Reservoir. To allow for operations of the pumped storage reservoirs, only one reservoir can be full at a time. **Some water will always remain in each reservoir, due to dead storage**." Seepage control measures will be applied to minimize seepage from the reservoirs. However, because some seepage is anticipated, a series of seepage **recovery** wells will be constructed downgradient of the reservoirs to return seepage to the reservoirs. **The total water recovered will be a combination of seepage and native groundwater.**

Page 7, ¶ 1 after 2.0 Background, change to:

As part of the License Application and CEQA requirements, the Applicant conducted studies to assess the potential impact of the Project on the environment. The studies included assessment of the geology, hydrogeology, biology, **cultural resources, visual resources, noise, air quality**, and design and construction in the Project site and surrounding area (GEI Consultants, Inc., 2009a, 2009b, and 2009c; and State Water Board, 2010).

Page 7, ¶ 3, last sentence, change to:

If the results from the Phase I and Phase II Site Investigations discover new potential impacts to the environment, **or a substantial increase in the severity of previously disclosed impacts**, the environmental documentation for the project may need to be updated to include those impacts before the Project can be constructed.

Page 8, ¶ 2 after 2.1 Geology, 2nd to last sentence (after "…this acid.") change to:

"Metal leaching – when metals leach into contact water without acidification – must also be evaluated during the Phase I and II Site Investigations. The Performance Standard that shall be met will be maintenance of water **quality in the monitoring wells downgradient of the seepage recovery wells at a level comparable to the existing groundwater background values."**

Page 8, ¶ 3 after 2.2 Hydrogeology, add after last sentence (after "(DWR, 1979))":

"**The project proposes to extract about 114,000 AF over the project life span of 50 years. This amounts to less than 1 percent of the total ground water in storage in the basin, not accounting for any natural recharge over that period.**"

Page 9, ¶ 2, after first sentence (after "…Pinto Groundwater Basin.") change to:

"Kaiser added four wells in the upper Chuckwalla Valley Groundwater Basins, starting in 1958, to **supplement** supply water to the mine over a period of about 37 years. Between

1965 and 1981 the groundwater pumping was relatively consistent and at rates sufficiently high to affect local groundwater elevations. Data from nearby wells show that **locally** there was approximately 15 feet of drawdown **at the eastern edge of** the Pinto Basin, and up to 24 feet of drawdown in the upper Chuckwalla Valley Groundwater Basin between 1952 and 1981. **About 208,000 AF was extracted for the mine operations during this period, about double the amount Eagle Crest Energy proposes to extract**."

Page 9, ¶ 3, change to:

During a six year period from 1981 through 1986, there was an increase in groundwater pumping near Desert Center due to increased agricultural use (primarily jojoba and asparagus) in the area. In 1986, groundwater pumping for agricultural use in the Chuckwalla Valley was approximately 20,800 acre-feet per year (AFY). Groundwater level data in the Desert Center area show that the drawdown during the 1981-1986 period was approximately 130 feet. **Elsewhere in the basin during this same time period groundwater levels increased and decreased locally, but were typically only on the order of less than tens of feet, indicating the groundwater level of 130 feet was only a local pumping effect.** As of 2007, irrigation for agriculture in the Desert Center area was estimated to be 6,400 AFY, and measurements show a 4-foot rise from the 1981 groundwater levels (GEI Consultants, Inc., 2009a).

Page 9, header "2.2.2 Groundwater Supply Pumping Effects" change number to:

2.2.1 Groundwater Supply Pumping Effects

Page 9, last ¶, change to:

"Potential impacts to the Chuckwalla Valley Groundwater Basin from Project pumping were analyzed in May and October 2009 and presented in a technical memorandum titled: *Eagle Mountain Pumped Storage Project – Groundwater Supply Pumping Effects* (GEI Consultants, Inc., 2009a). A water balance was created to assess the Project's basin-wide effects on groundwater and **the cumulative** effects on the perennial yield of the basin."

Page 10, 2nd bullet, change to:

- The Project will use groundwater to fill the reservoirs and to make up for losses due to seepage and evaporation. Approximately **30,000**AF of water is needed to fill the reservoirs to full operating capacity, **with** accounting for seepage and evaporation losses. Estimated seepage and evaporation losses are presented in Table 1.

Page 10, Table 1, add footnote:

[5] Actual seepage rates to be confirmed by water balance methods during facility operation

Page 11, 1st bullet, continued. 3rd sentence, change to:
"The results were compared to drawdown that occurred as a result of Kaiser groundwater pumping in **just** the upper Chuckwalla Valley Groundwater Basin over a 17-year period from 1965 to 1981 (average pumping rate of 2,208 gpm) and from agriculture pumping near Desert Center between 1981 and 1986 (average pumping rate of 10,702 gpm)."

Page 11, Table 2, add an additional row following row 6 and add word to row 8 (previously row 7):

Source of Test Data	**Storativity (unit less)[1]**	**Hydraulic Conductivity (feet/day)**	**Transmissivity (gallons per day/foot)**	**Saturated Aquifer Thickness (feet)**
Well Log	Not Reported	101	64,000	85
Well Log	Not Reported	39	48,000	166
Well Log	Not Reported	44	57,000	175
Well Log	Not Reported	51	57,000	150
Pump Test	0.06	118	264,000	300
Pump Test	0.05	139	311,288	300
Values used for water supply modeling	**0.05**	**125**	**280,000**	**300**
Values used for **seepage** modeling	0.05	50	56,000	150

Pages 11 and 12, last ¶, change to:

To reduce the impacts of groundwater pumping, the Project supply wells will be constructed to minimize overlapping cones of depression, and interceptor wells will be

[1] Storativity is a ratio of the volume of water that a permeable unit will absorb or expel from storage per unit surface area per unit change in head.

installed **to recover an equal volume of water that has seeped** from the reservoirs. Reservoir seepage will likely have a different chemical signature than **rainfall that has** percolated **and become** groundwater. Recovered seepage will be returned to the reservoirs **with a goal to maintain the existing quality of** local groundwater. Groundwater and **recovered** seepage will be used to offset seepage and evaporative losses once **filling of** the **reservoirs begins**.

Page 13, ¶ 2, change to:
The maximum depletion in storage from the Chuckwalla Valley Groundwater Basin, as a result of the Project, and existing and future uses, will be about **114,000 AF** and is projected to occur in **2056**. The maximum projected depletion in storage would be about one percent or less of the **conservatively estimated** 9.1 **to 15** million acre-feet of the estimated total groundwater storage in the basin.

Page 13, ¶ 3, change to:
There are about 150 feet of saturated alluvium in the upper Chuckwalla Valley Groundwater Basin. Cumulative impacts from Project and non-Project uses, **conservatively assuming zero groundwater recharge**, will lower groundwater levels by about 10 to 18 feet over a 50 year period, leaving over 130 feet of saturated alluvium to continue to supply water to the wells in the upper Chuckwalla Valley Groundwater Basin.

Page 14, ¶ 1, change to:
The expected quantity of seepage through the Upper and Lower Reservoirs was evaluated by performing seepage analyses using the SEEP/W module of the two-dimensional, finite-element geotechnical engineering software GeoStudio 2007. The different input parameters were used in the model to review alternatives that could be used to reduce seepage from the Lower and Upper Reservoirs to account for variable subsurface conditions of the two reservoirs. The Lower Reservoir will be partially situated on unconsolidated alluvium, whereas the Upper Reservoir will sit atop fractured bedrock. The estimates of hydraulic conductivity for the various geologic materials were developed based on the results of field permeability tests, laboratory permeability tests, correlations with published values based on material descriptions, and empirical correlations between grain size and permeability. These estimates are based on a small quantity of samples because the applicant currently does not have access to the site. Seepage flow rates and gradients were estimated at both the Upper and Lower Reservoir sites using liner thicknesses of three, five, and eight feet placed in just the bottom of the reservoir at minimum and maximum water storage elevations.

Page 14, 1st bullet, change to:
• **Upon filling of the Upper and Lower Reservoirs some seepage is expected. If not controlled, the seeping water could potentially produce conditions of hydrocompaction resulting in overlying ground subsidence.**

Page 15, 1st bullet, change to:
The maximum reduction estimated for the Lower Reservoir was approximately 3 percent or 50 AF annually using only a fine tailings liner. The fine tailings liner thickness had minimal impact on the estimated reduction in annual seepage volume from the Lower Reservoir. The upper half of the east walls in the Lower Reservoir consists of an alluvium deposit that is too steep to support the fine tailings liner. Using an eight-foot thick liner composed of fine tailings, grouting rock fractures, and roller compacted concrete as needed would reduce the average annual seepage volume from the Lower Reservoir approximately 1000 AF. The need for additional seepage reduction measures in the Lower Reservoir will be evaluated as presented in Condition 7.

Page 15, ¶ 1 , change to:
Seepage from the reservoirs has the potential to affect groundwater quality. The beneficial uses of groundwater of the Chuckwalla Valley Hydrologic Unit are: municipal supply and domestic supply (MUN); industrial service supply (IND); and agricultural supply (AGR). The Colorado River Regional Water Quality Control Board (Colorado River Regional Water Board) water quality standards for groundwater, based on MCLs, apply to the Project waters. Table 3 shows the numeric standards for inorganic chemical constituents that apply to water designated for MUN use. **It also contains background water quality near the reservoirs and near Desert Center. The background water quality currently exceeds the numeric MUN standards for some constituents**.

Table 3
Colorado River Regional Water Board Numeric Standards for Inorganic Chemical Constituents for MUN Use Designation and Chuckwalla Valley Groundwater Quality.

Inorganic Chemical Constituent	Basin Plan MCL** (mg/L)	Background Groundwater Quality (Bedrock beneath Project)[1]		Receiving Groundwater Quality (Alluvium in Upper Chuckwalla Valley)		Source Water to Fill Reservoirs (Near Proposed Project Wells)	
		Min	Max	Min	Max	Min	Max
Arsenic	0.01	<0.01	<0.01	0.0058*	0.024	0.009*	0.025*
Barium	1.0	Unk	Unk	0.011	0.049	Unk	Unk
Cadmium	0.005	Unk	Unk	<0.0001	0.0002	Unk	Unk
Chromium (total)	0.05	0.02	0.98	<0.001	0.07	Unk	Unk
Fluoride	2.0	0.6	5.1*	0.5	10	3.6*	12*
Lead	0.015	<0.01*	0.01*	<0.001	0.29	Unk	Unk
Mercury	0.002	Unk	Unk	<0.0002	<0.0002	Unk	Unk
Nitrate (as NO3)	45	0.2*	74	<0.1	51	0.65*	14*
Nitrate+Nitrite (as N)	10	Unk	Unk	Unk	Unk	Unk	Unk

Selenium	**0.005**	**Unk**	**Unk**	**<0.005**	**0.008**	**<0.5***	**<0.5***
Silver	**0.10**	**Unk**	**Unk**	**<0.010**	**<0.010**	**Unk**	**Unk**
TDS		**685***	**1170**	**430**	**1480**	**390***	**925***
pH		**7.7**	**8.1**	**6.6**	**8.6**	**7.1***	**8.7***

Unk = Unknown
mg/L = Milligrams per Liter
[1] Partial list of on-site monitoring wells
*** Indicates that there were less than four quarters of data.**
**** Colorado River Basin Plan, 2011.**

Pages 15 and 16, ¶ 2 and ¶ 1, change to:
Without reservoir seepage reduction measures and interceptor wells, it will take at least 15 years for the steady-state groundwater profile of the Lower Reservoir to fully develop. This estimate **conservatively** assumes a two-year filling period, the reservoir **continually remains full after filling**, and the maximum estimated seepage volume is achieved from the Lower Reservoir. Under the same assumptions, the steady- state groundwater profile will take at least 50 years to fully develop for the Upper Reservoir. Existing groundwater levels are estimated to be 1,000 feet below the lowest level of the Upper Reservoir and less than 100 feet below the lowest level of the Lower Reservoir.

Page 16, ¶ 4 and ¶ 5, change to:
The numerical model MODFLOW was used to assess the effects of seepage from the Lower Reservoir on local groundwater conditions. Based on the seepage analysis and geologic assessment of the Upper and Lower Reservoirs, the Lower Reservoir will have larger increases in groundwater elevations. Operation of the pumped storage project will allow only one reservoir to be full at any one time, **but there always will be some water in each reservoir (dead storage)**.

Results of the MODFLOW model indicate that groundwater levels in the vicinity of the CRA would increase by up to three feet as a result of seepage from the Lower Reservoir if it is not controlled by interceptor wells. Because the estimated groundwater elevation is predicted to be approximately 450 feet below the ground surface, no uplift forces are expected on the concrete lining of the **CRA**. Six interceptor wells will be constructed east of the Lower Reservoir to **recover** seepage from the Lower Reservoir and return it to the Lower Reservoir. **This water quality certification includes conditions that will require additional assessment of potential seepage impacts, and establishes Performance Standards for seepage**.

Page 16, ¶ 6 and 7, change to:
A groundwater model was not developed to assess seepage from the Upper Reservoir because there is not **sufficient** data available to **develop a valid** model. This water quality certification includes conditions that will require additional assessment of potential seepage impacts, and establishes Performance Objectives for seepage.

A geologic assessment of the major faulting pattern was prepared to develop a preliminary seepage interceptor well network to **recover** the seepage from the Upper Reservoir. **Seepage** from the Upper Reservoir is anticipated to occur along joints, fractures, and faults that cross beneath the Upper Reservoir. Observations from two borings completed in the Upper Reservoir site vicinity suggest that water may be present in joints and fractures at various depths and that lower fractures are either dry or at lower heads. Seepage interceptor wells will be **installed in the proximity of the major faults** south of the Upper Reservoir and along the axis of Eagle Creek Canyon to recover seepage and provide secondary control to prevent groundwater levels from rising beneath the **proposed landfill**.

Page 17, ¶ 2, change to:
The Project could be operating in conjunction with the neighboring proposed Landfill. The proposed site for the Landfill is **east** (downgradient) of the Upper Reservoir. **The estimated groundwater levels resulting from seepage from the Upper Reservoir utilizing the additional seepage control measures are a minimum of approximately 125 feet lower than the estimated ground surface." Even in the worst case scenario, water levels are 50' below existing ground surface. The worst case scenario includes the upper reservoir maintained constantly full and with no seepage control wells, so is therefore not a realistic scenario**. Potential impacts to the proposed Landfill, associated with reservoir seepage, will be mitigated by implementation of Condition 7.

Page 18, 2nd bullet, change to:
• Desert Tortoise. Desert Tortoise may be affected by Project construction, particularly along the proposed transmission corridor. The Project may adversely affect Desert Tortoise, and as such, this impact is potentially significant and subject to mitigation. Comprehensive Desert Tortoise surveys were conducted by the Applicant in early April of 2008, 2009, and 2010. Results of the surveys show that habitat for Desert Tortoise exists within the Project area. **The recommendations and findings from the surveys are incorporated in 7 mitigation measures included as part of the Draft EIR. A Biological Opinion for the desert tortoise was prepared by the U.S. Fish and Wildlife Service, and the California Department of Fish and Game has issued a related Consistency Determination for the Eagle Mountain Pumped Storage Project. The Terms and Conditions of the Biological Opinion will be implemented to avoid and mitigate potential impacts to Desert Tortoise throughout the life of the Project.**

Page 17, ¶ 1, change to:
Material from the tunnel excavation will be used during construction of the proposed Project to the extent feasible. Tunnel material can be used for backfill, road base, rough grading, flood berms, and possibly for roller compacted concrete in the dams. Any material from the tunnel excavation in excess of what is used in construction will be placed in the reservoirs or in areas from which fine tailings were removed. Any material removed from tunnel excavation shall be tested before being placed in the reservoirs and not contribute to water acidity or metal leaching. The Upper Reservoir will have 2,300

AF of dead storage volume, and the Lower Reservoir will have 4,300 AF of dead storage volume. A **portion of this volume could be utilized for disposal of tunnel excavation spoil material as long as it does not interfere with performance of the reservoir intake and outlet works.** The estimated quantity of material to be excavated is shown in Table 4.

Page 23, ¶ 4, change to:
With the Project, runoff from Eagle Creek will follow current drainage channels to discharge into the Lower Reservoir. **Water from the Lower Reservoir will be treated to maintain salinity levels and metals concentrations at or below the existing maximum levels of the receiving water for the alluvium in the Upper Chuckwalla Valley, as shown in Table 3. The values for the existing concentrations will be confirmed prior to project operation**.

Page 25, ¶ 2, change to:
Interceptor wells must control the seepage. Seepage interceptor wells will be constructed in the downgradient direction of both the Upper and Lower Reservoirs. Groundwater quality monitoring will be conducted in the seepage interceptor wells, **private neighboring wells, and other monitoring wells** to determine **whether groundwater is being adversely impacted by Project operations**.

Page 28, ¶ 4, change to:
The Upper and Lower Reservoirs will be designed with engineered seepage control measures to minimize seepage losses. However, some seepage is expected from both the Upper and Lower Reservoirs. To prevent groundwater quality degradation, seepage interceptor wells will be sited around the perimeter of the reservoirs in the downgradient direction to **recover** seepage and return it to the reservoirs. Reservoir water and seepage may be in contact with ore so the seepage interceptor wells **and down-gradient monitoring wells** will be monitored to assess impacts to groundwater quality. Condition 7 addresses seepage management and monitoring.

Page 31, ¶ 3, change to:
In the Chuckwalla Groundwater Basin, historic groundwater quality TDS concentrations only occasionally exceed 3,000 mg/L (see Draft EIR, Table 3.3-3) and none of the other exceptions would apply to the aquifer of the Chuckwalla Valley Groundwater Basin, reinforcing that the current municipal or domestic water supply classifications are generally appropriate. Therefore, the Colorado River Regional Water Board water quality standards for **maintaining the existing quality of** groundwater would apply to the Project waters.

Page 32, ¶ 2, change to:
The Draft and Final EIRs identify three unavoidable and significant impacts: 1) air quality during Project construction activities; 2) visual resources; and 3) cumulative impacts to groundwater resources due to Project pumping combined with groundwater use for other

reasonably foreseeable projects within the region. For unavoidable and significant impacts, CEQA requires public agencies to prepare a statement of overriding considerations, which reflects the ultimate balancing of competing public objectives (including environmental, legal, technical, social, and economic factors) that the agency is required by law to carry out or approve. The State Water Board has also prepared CEQA Findings as required pursuant to Guidelines sections 15091-15093, and a MMRP. **All mitigation measures in the EIR are incorporated by reference and into the WQC, as expressly set forth in Attachment B**. The final MMRP will be included as Attachment B in the final water quality certification. The required CEQA Findings and Statement of Overriding Considerations will be issued concurrently with the approval of the final water quality certification and included as Attachment C to the final water quality certification

Page 33, Condition 1. ¶ 1 - 2, change to:
The Applicant shall begin a Phase I Site Investigation after the Federal Energy Regulatory Commission (FERC) license has been granted, site access is obtained, and regulatory agencies have granted approval for ground disturbing activities. The purpose of the Phase I Site Investigations is to confirm that basic Project feature locations are appropriate and to provide basic design parameters for the final layout of Project features. Field work shall be completed within six months from the start of the Phase 1 investigation. Results of the Phase I Site Investigation shall be compiled in a report and submitted to the Deputy Director within twelve months after the **completion** of the Phase I Site Investigation. The Deputy Director may require modification of the Phase I Site Investigation **Report** to ensure conditions of this certification are met. If, within 60 days, the Deputy Director does not either act on the request for **acceptance**, or identify the need for additional information or actions, the Plan shall be deemed **accepted.** The Phase I Site Investigation report shall include, but is not limited to, studies of: the Upper and Lower Reservoir sites; hydraulic structures; tunnels, shafts, and powerhouse; reservoir and tunnel seepage potentials; hydrocompaction and subsidence potentials; reservoir-triggered seismicity; and water quality issues in the reservoirs and seepage associated with ore-body contact. The Applicant shall follow procedures outlined in the Phase I Pre-Design Site Investigation Plan in the Draft EIR, **unless an alternative Plan is accepted by the Deputy Director**.

Following the Deputy Director **acceptance** of the Phase I Site Investigation report, and based on any design refinements developed during pre-design engineering, Phase II Site Investigation studies shall be completed to support final design of the Project features and bids for Project construction. The Applicant shall provide the Phase II Site Investigation Plan to the Deputy Director for review and **acceptance**. The Phase II Site Investigation shall not begin until the Phase II Site Investigation Plan is approved by the Deputy Director. The Deputy Director may require modification of the Phase II Site Investigation Plan to ensure conditions of this certification are met. If, within 60 days, the Deputy Director does not either act on the request for **acceptance** or identify the need for additional information or actions, the Plan shall be deemed **accepted**.

The Phase II Site Investigation Report, summarizing the comprehensive findings of the Phase I and Phase II Site Investigations, shall be submitted to the Deputy Director for acceptance before the Project's final design is implemented.

Project construction, including, but not limited to groundwater pumping and reservoir filling shall not proceed until the Deputy Director accepts the Project's **conceptual** design. If, within 60 days, the Deputy Director does not either act on the request for acceptance or identify the need for additional information or actions, the Plan shall be deemed accepted.

Page 34, Condition 2, ¶ 1 - 4, change to:
The Applicant shall conduct sensitive species surveys **as described in the MMRP (Attachment B)** after it has gained access to the Central Project Area **and received a license from the Commission**, at the start of project design. The Applicant shall modify sensitive species protective measures identified in Section 3.6 of the Draft EIR based on this additional survey information.

As described in the MMRP, a comprehensive site-specific biological mitigation and monitoring program shall be implemented in consultation with the Biological Technical Advisory Team. The Technical Advisory Team shall be composed of the Owner's staff Environmental Coordinator and consultants, and staff from the resource managing agencies (BLM, USFWS, and CDFG). The Comprehensive Site-Specific Mitigation and Monitoring Program must be approved by USFWS and CDFG, and provided to the Deputy Director for confirmation before starting construction. Other than Phase 1 Site Investigation testing, n**o major project construction activities may commence until the Plan is confirmed by the Deputy Director. If, within 60 days, the Deputy Director does not either act on the request for approval or identify the need for additional information or actions, the Plan shall be deemed accepted.**

The Applicant, after consultation with USFWS and DFG, shall prepare an adaptive management plan for Couch's spadefoot toad (Toad AMP), to avoid disturbance of impoundments and avoid restriction of surface flow to impoundments. **As set forth in the MMRP**, surveys in the Project area shall identify the presence of any artificial impoundment or ephemeral pools that could support Couch's spadefoot toad reproduction. The Toad AMP should be approved by USFWS and DFG, and provided to the Deputy Director for acceptance. Construction shall not begin until the Toad AMP is **accepte**d by the Deputy Director. If, within 60 days, the Deputy Director does not either act on the request for approval or identify the need for additional information or actions, the Plan shall be deemed **accepted**.

The Licensee shall implement conservation measures required by the U.S. Fish and Wildlife Service Final Biological Opinion and the California Department of Fish and Game Consistency Determination to protect the desert tortoise within the Project Boundary.

Construction and daily operations in the Project area may impact wildlife that occupy or migrate through the Project area. In addition, faunal community structure may be altered if predators are attracted to reservoirs due to available water or night lighting. To reduce these impacts to a less than significant level, all mitigation measures relevant to wildlife contained in the final EIR and incorporated into the MMRP are hereby incorporated as conditions of this water quality certification. Additional wildlife protection measures associated with fencing are outlined in Condition 3.

Page 35, Condition 3., ¶ 2 (Fencing), change to:
The Applicant shall install permanent security fences around the Upper and Lower Reservoirs, switchyard, brine ponds and any structure or area that may be dangerous to wildlife in the Project area prior to construction of these facilities. **As specified in the Biological Opinion, fences shall be constructed in a manner that prevents wildlife access to the Reservoirs.**

Page 37 last paragraph and page 38 ¶ 1, Condition 5., suggested change to:

Water production at wells operated on properties in close proximity to the Project wells **(within one-mile radius)** could potentially be affected by Project pumping, so the Groundwater Level Monitoring Plan must also monitor neighboring production wells **within one mile radius** if granted permission by the land owners. All monitoring conducted as part of the Groundwater Level Monitoring Plan shall be submitted to the State Water Board **within 60 days after the end of each quarterly sampling event** and annually in a summary report. The Applicant shall develop and maintain a publicly-available website for the duration of the Project, with all the monitoring data, for the duration of the Project. The Applicant shall submit the monitoring data and reports required by this water quality certification electronically in a format accepted by the State Water Board as described in General Condition B of this water quality certification. The Deputy Director may require the Applicant to incorporate this information into public reports and the State Water Board's water quality database systems in compliance with California Water Code section 13167. Website information shall be made available to all interested parties.

If monitoring indicates that Project operation has adversely **altered existing** neighboring **(within one mile radius)** production well water quality or **reduced pumping depth by 5 feet or more**, the Applicant shall consult with the owner of the affected well, and State Water Board and Colorado River Regional Water Board staffs to develop a plan to **relieve or compensate effects** to **existing** production well operation.

Pages 38-40, Condition 6.

As noted in general comments above condition 6 contains conflicting statements regarding the applicable water quality standards that apply to project waters. Condition 6 mistakenly applies a drinking water MCL standard rather than the correct standard which is to maintain water quality in the reservoirs equivalent to the input ground water, and to maintain the existing water quality [i.e., prevent the degradation of] ground water that may receive seepage losses from the reservoirs. Condition 6 needs to be clarified for consistent reference to the correct water quality standard, which is to minimize the quantities of contaminants reaching any ground water basin and maintain existing groundwater quality consistent with the Regional Water Quality Control Board's Water Quality Control Plan, which states, in part that:

> "Establishment of numerical objectives for groundwater involves complex considerations since the quality of ground water varies significantly with depth of well perforations, existing water levels, geology, hydrology and several other factors. Unavailability of adequate historical data compounds this problem...Ideally the Regional Board's goal is to maintain the existing water quality of all nondegraded ground water basins. However, in most cases ground water that is pumped generally returns to the basin after use with an increase in mineral concentrations such as total dissolved solids (TDS), nitrate etc., that are picked up by water during its use. Under these circumstances, the Regional Board's objective is to minimize the quantities of contaminants reaching any ground water basin. This could be achieved by establishing management practices for major discharges to land. Until the Regional Board can complete investigations for the establishment of management practices, the objective will be to maintain the existing water quality where feasible." (Source: *Water Quality Control Plan, Colorado River Basin- Region 7, (Includes Amendments Adopted by the Regional Board through June 2006), pp. 3-7 – 3-8*, California Regional Water Quality Control Board, State Water Resources Control Board.)

Other suggested changes to Condition 6 include:

Page 39, ¶ 1,

The Applicant is not expected to improve water quality in the basin nor shall they degrade it. The Applicant proposes to treat the stored water to maintain salinity, trace mineral (metals) and acidity levels not to exceed the concentrations and pH levels in the local groundwater. To verify that water quality is maintained, the Applicant shall submit a site-specific Monitoring and Reporting Plan for Surface Waters (Surface Waters MRP) to the Deputy Director for acceptance. The Deputy Director may require modifications as part of the **acceptance as necessary to assure compliance with the Basin Plan**. The

Surface Waters MRP must be submitted after Phase II Site Investigations **are** complete and must be approved prior to **completion of the initial** filling **of the Lower reservoir**. If, within 60 days, the Deputy Director does not either act on the request for acceptance or identify the need for additional information or actions, the Plan shall be deemed accepted

Page 39, ¶2,

The Surface Waters MRP **shall** include a Detection Monitoring Program to detect seepage from the reservoirs. The Surface Waters MRP **shall** be coordinated with the plans required in Condition 4. The Surface Waters MRP **shall include corrective actions** should reservoir water quality or reservoir seepage **begin to degrade existing** groundwater quality. To ensure seepage from the reservoirs does not **degrade the existing quality of the receiving groundwater** throughout the life of the Project, the water quality in the reservoirs shall be maintained equivalent to the quality of the source water.

Page 39, ¶2, last sentence:

As noted in general comments above, the Eagle Tank Spring is more than 3 miles from the western edge of the proposed Upper Reservoir and it is unlikely that there are major geologic fractures connecting the reservoir to the springs over the distance separating the two features. Based upon the lack of hydrologic connection with Eagle Tank Spring and the distance between the project reservoirs and the spring, the FEIR concluded that there is no potential impact associated with the remote spring, and on that basis, we respectfully request that the requirement to monitor Eagle Tank Spring be removed from Condition 6.

Page 40, Condition 7, ¶ 1:

The Applicant shall install interceptor wells to **recover** seepage from the Upper and Lower Reservoirs. Seepage interceptor wells **shall** be constructed in the downgradient direction of both the Upper and Lower Reservoirs.

Page 40, Condition 7, ¶ 2 *Groundwater Quality Monitoring*:

The Applicant shall submit a Groundwater Quality Monitoring Plan and Seepage Management Plan to the Deputy Director for review and approval prior to filling the reservoirs. The Deputy Director may require modifications as part of the approvals. If, within 60 days, the Deputy Director does not either act on the request for approval or identify the need for additional information or actions, the Plan shall be deemed approved.

At a minimum, the Groundwater Quality Monitoring Plan **shall** include baseline groundwater quality monitoring and characterization of the production, monitoring, and seepage wells for **four quarters** before the operation of the Project. **The Groundwater Quality Monitoring Plan shall include monitoring in the Central Project Area wells**. **The Applicant shall submit monitoring results to the State Water Board within 60 days after each quarter and annually in a summary report**.

Page 40, Condition 7, ¶ 3:

The Applicant shall conduct groundwater quality monitoring for the life of the Project. This monitoring **shall** include monitoring of production wells, seepage interceptor wells and neighboring wells to determine whether groundwater quality is being adversely impacted by Project operations. Groundwater monitoring shall be conducted quarterly **for two years after the initial reservoir filling and not less than annually thereafter** and submitted electronically as required by Condition 5. If necessary, the Deputy Director may require operational changes to reduce the potential for impacts to groundwater quality.

Page 40, Condition 7, ¶ 4:

The Applicant shall monitor for salinity and pH, and maintain water quality in the reservoirs at approximately the same salinity and pH as the source groundwater. The Applicant shall notify the Deputy Director **if** seepage salinity (measured as Specific Conductance or SC) exceeds source water salinity by more than 500 micro Siemens per centimeter (µS/cm), or if groundwater monitoring downgradient of the interceptor wells increases more than 100 µS/cm from background levels. The Deputy Director **shall** also be notified if seepage pH drops below 6 or the pH of groundwater downgradient of the interceptor wells decreases by more than 1.0 belowbackground levels. The State Water Board will assess and may require modification of the seepage interceptor well network and groundwater monitoring, and may require changes in Project operations to ensure protection of groundwater resources.

The Applicant shall comply with the Colorado River Regional Water Board water quality standards for groundwater. The water quality in the reservoirs shall **be maintained approximately equivalent to the input water quality. Any significant reduction of measured constituents from the baseline data shall be considered a violation of this water quality certification and must be reported to the Deputy Director within 15 days of receipt of sampling results.**

Pages 40 - 41, *Seepage Management*:

The Applicant shall submit a Seepage Management Plan to the Deputy Director for approval. The Deputy Director may require modifications as part of the approval of the Plan. The Seepage Management Plan **shall** be reviewed and updated by the Applicant no less than every two years. As part of the update, the Applicant shall summarize existing data, evaluate the effectiveness of the groundwater monitoring and seepage control methods, and make recommendations for future seepage management. The updated Seepage Management Plan shall be provided to the Deputy Director by January 15 of each reporting year for approval. The seepage control measures identified in the approved Seepage Management Plan must be in place, prior to filling the reservoirs.

The Seepage Management Plan **shall** include identification of zones where seepage can be anticipated, criteria for evaluating seepage management strategies and an implementation strategy to minimize seepage to the greatest extent feasible. The Applicant shall evaluate the effectiveness of various methods to control seepage and to mitigate the effects of seepage as part of the Seepage Management Plan.

The Seepage Management Plan **shall** also evaluate the compatibility of the Project with operation of the proposed Landfill. The Applicant shall conduct a detailed reconnaissance of the reservoir basins and connecting tunnel to identify zones where seepage would be expected to occur. These areas may have faults, fissures and cracks in the bedrock, and zones that have direct connection to the alluvial deposits of the Chuckwalla Valley. In the event that the proposed Landfill is permitted and constructed south of the Upper Reservoir, the Project must be operated such that it will not cause pumped groundwater or seepage to encounter the Landfill's liner.

The Seepage Management Plan shall include an adaptive management strategy to implement additional necessary measures to control seepage if at any time Project operation monitoring indicates that further seepage controls are necessary to maintain seepage below Performance Standard of the estimated average seepage volume developed during Phase 1 and 2 Site Investigations. The Seepage Management Plan must identify corrective actions to reduce that portion or fully recover reservoir seepage should monitoring indicate that operation of the Project is contributing to groundwater quality degradation. Corrective actions may include curtailment of groundwater source pumping until seepage issues or groundwater quality degradation has been adequately addressed.

The Applicant shall conduct monitoring for seepage over the life of the Project. All monitoring conducted as part of the Seepage Management Plan will be reported

quarterly to the State Water Board and annually in a summary report as required by the MMRP. If necessary, the Deputy Director will prescribe operational changes to reduce the potential for uplift forces and hydrocompaction that could affect the CRA and impacts to groundwater levels and quality.

The Applicant shall limit seepage from the two Project reservoirs to the maximum extent possible, and shall not exceed the estimated average seepage volume determined in the Phase 1 and 2 Site Investigation analyses unless approved by the Deputy Director. The Applicant shall use fine tailing liners, as described in Section 2.2.3 of the Final EIR, and other seepage control measures identified in the Seepage Management Plan.

Seepage interceptor wells **shall** be operated to maintain groundwater levels ±5 feet of the lowest historic levels recorded between 1981 and 1986 in areas where hydrocompaction could potentially occur and adversely impact the CRA or other infrastructure. These wells will return the intercepted seepage to the Lower Reservoir. To confirm that the seepage interceptor wells are working as designed, groundwater level and quality monitoring **shall** be conducted in the following areas:

- **Upgradient and downgradient wells of reservoirs;**
- **Brine ponds;**
- **At seepage interceptor wells.**

All groundwater mitigation measures contained in the Final EIR and all monitoring and reporting required by the MMRP are hereby incorporated as conditions of this water quality certification.

Page 43, Condition 8:

Prior to Project construction, the Applicant shall submit a Water Treatment, Waste Management, Storage, and Disposal Plan to the Deputy Director for approval. The Deputy Director may require modifications as part of the approval. Project construction **shall** not begin until the Water Treatment, Waste Management, Storage, and Disposal Plan is approved by the Deputy Director.

At a minimum, the Water Treatment, Waste Management, Storage, and Disposal Plan **shall** include the following:

[no further suggested edits]; [end of comments]