ATTACHMENT B

Mitigation Monitoring and Reporting Plan
Water Quality Certification of Eagle Crest Energy Company's
Eagle Mountain Pumped Storage Project
(State Clearinghouse #2009011010)
State Water Resources Control Board
July 2013

Mitigation Program	Responsible Party	Timing for Mitigation
Geology and Soils		
MM GEO-1. Erosion Control Plan. Erosion and sediment control measures for each area type, including proposed best management practices (BMPs), are listed in the Erosion Control Plan in Section 12.2 of the Final EIR. The Applicant shall limit impacts to soil erosion through implementation of an Erosion Control Plan limiting surface disturbance to only those areas necessary for construction as required by California Code of Regulations, title 23, section 122.26. Where natural topsoil occurs, it would be salvaged and stockpiled prior to construction, and the soil piles stabilized. Following construction, all areas where natural topsoils were removed that are not occupied by permanent Project facilities would be re-graded, have the topsoils replaced, and be seeded with native vegetation to reduce erosion potential. Erosion control measures will be maintained throughout the life of the Project. At minimum, the Applicant shall use and implement the following BMPs for effective temporary and final soil stabilization during construction:	Licensee (Contractor/ Environmental Coordinator) in consultation with State Water Board.	The Erosion Control Plan will be developed during Final Engineering/Pre-construction and implemented during Construction and Operation. The Licensee shall submit the SWPPP to the Deputy Director for review and approval. The Deputy Director may require modifications as part of the approval. Project construction shall not start until the SWPPP is approved by the Deputy Director.

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• Preserving existing vegetation where required and when feasible to prevent or minimize erosion. • Once existing vegetation is cleared, construction will follow immediately behind to reduce unnecessary exposure of scarified soil to wind and water. • Sloping roadways and excavations away from washes will prevent or minimize erosion into washes. Where haul roads cross surface washes, the ground will be cleared of loose soil and pre-existing sediments, as necessary. • Installation of riprap at the washes prevent or minimize erosion. • Small earthen embankments will be built within washes in order to slow or divert surface water to reduce erosion. • Silt fences will be installed when working around a wash to prevent sediment from entering washes during a rain storm and will be constructed as described in Attachment B of Section 12.2 of the Final EIR (e.g., buried to a depth of at least 12 inches). • The Applicant contractor will be required to preserve and protect existing vegetation not required, or otherwise authorized, to be removed. Vegetation will be protected from damage or injury caused by construction operations, personnel, or equipment by the use of temporary fencing, protective barriers, or other similar methods. • Water will be applied to disturbed soil areas of the Project site to control wind erosion and dust. Water applications will be monitored to prevent excessive runoff. • Sediment controls, structural measures that are intended to complement and enhance the soil stabilization (erosion control) measures, will be implemented. Sediment controls are designed to intercept and filter out soil particles detached and transported by the force of water.		

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Prior to construction, a Stormwater Pollution Prevention Plan (SWPPP) will be prepared detailing BMPs that will be implemented at the site. The Applicant will comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Order No. 2009-0009-DWQ and amendments thereto; NPDES No. CAS000002).		
PDF GEO-1. Subsurface Investigations. Detailed investigations to support final engineering will be conducted in two stages. The scopes of the Phases I and II Site Investigations are discussed in a technical memorandum found in Section 12.1 of the Final EIR. These generally include: **Phase I Site Investigations:** Based on available information and the current Project configuration, conduct a limited field program designed to confirm that basic Project feature locations are appropriate and to provide basic design parameters for the final layout of the Project features. Phase I Site Investigations will be initiated within 60 days after the FERC license is granted, site access is obtained, and regulatory agencies have granted approval for ground disturbing activities. Results from the field work will be filed with the State Water Board and FERC. The Phase I Site Investigations Report will include, but is not limited to: • detailed reconnaissance of the Upper and Lower Reservoir site conditions; • evaluation of geologic and geotechnical conditions at the locations of the reinforced concrete hydraulic structures (inlet/outlet structures); • evaluation of underground conditions affecting design and construction of water conveyance tunnels, access tunnel, shafts between tunnels, and underground powerhouse; • detailed evaluation and description of reservoir, brine ponds, and tunnel seepage potentials;	Licensee in consultation with State Water Board.	Upon Site Access. Phase I Site Investigations will be initiated after licensing and receipt of site access, at the initiation of the project engineering design phase. Results of the Phase I Site Investigations shall be compiled in a report and submitted to the Deputy Director for review and approval. The Deputy Director may require modifications of the Phase I Site Investigations Report. Following the Deputy Director approval of the Phase I Site Investigations Report, and based on any design refinements developed during pre-design engineering, Phase II Site Investigations shall be completed to support final design of the Project features and bids for Project construction. The Applicant shall provide the Phase II Site Investigations Plan to the Deputy Director for review and approval. The Phase II Site Investigations shall not begin until the Phase II Site Investigations Plan is approved by the Deputy Director. The Deputy Director may require modification of the Phase II Site Investigations Plan. The Phase II Site Investigations Report, summarizing the

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• detailed description of reservoir mapping and evaluation of reservoir-triggered seismicity; • evaluation of updated sensitive species surveys; and • evaluation of potential water quality impacts in the reservoirs and groundwater associated with ore-body contact. **Phase II Site Investigations:** Using the results of the Phase I Site Investigations, and based on any design refinements developed during pre-design engineering, conduct additional explorations that will support final design of the Project features and bids for construction of the Project. The Phase II Site Investigations will also include field investigations and modeling to support detailed evaluation of potential seepage from the Project features (reservoirs and water conveyance tunnels). The Phase II Site Investigations shall, at minimum: • ensure compatibility of the Project with existing and proposed land uses within the Project area; • establish background groundwater levels and background groundwater quality; • determine if Project operations will have a permanent impact on the aquifer's storativity; • confirm seepage for both reservoirs; • determine monitoring well network locations, well types, and well depths; • identify the most suitable location for horizontal monitoring wells under the reservoirs and brine ponds; • evaluate mass wasting, landslide, and slope stability issues related to loading and unloading the reservoirs; • evaluate the use of geosynthetic liners as a seepage control measure for the reservoirs and the brine ponds;		comprehensive findings of the Phase I and Phase II Site Investigations, shall be submitted to the Deputy Director for approval before the Project's final design is implemented. Project construction, including, but not limited to groundwater pumping for reservoir filling shall not proceed until the Deputy Director approves the Project's final design.

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• assess whether the Chuckwalla Valley Groundwater Basin aquifers are confined or not; • determine if modifications to the Eagle Creek channel are required and describe the extent of earthwork required; and • assess hydrocompaction and subsidence potentials.		
PDF GEO-2. Geologic Mapping. During site investigations, geologic mapping will be performed by Project Engineers to identify conditions of the overburden and bedrock exposed in the mine pits (reservoir areas) that may affect the stability of existing slopes during reservoir level fluctuations. Mapping will identify the degree and orientation of jointing and fracturing, faulting, weathering, and the dimensions of the benches excavated during mining. The stability of the cut slopes and benches will be assessed at this time. Geologic mapping will begin during the Phase I Site Investigations (*see* Section 12.1 of the Final EIR for details) and will continue during Phase II Site Investigations. During construction, areas within the pits that exhibit unstable slopes because of adverse fracture sets exposed in the pit walls will be scaled of loose rock and unstable blocks. Material scaled from the side slopes will be removed and disposed of outside the pit, or pushed downslope and buried in the bottom of the pit. Rock slopes within the East and Central pits that lie below an elevation of five feet above the maximum water level will be scaled of loose and unstable rock during construction. Existing cut slopes that lie above these elevations will not be modified unless there is evidence of potential failure areas that could impact Project facilities. Final Project design will be reviewed by the State Water Board and approved by the FERC.	Licensee, in consultation with State Water Board.	Geologic mapping will be initiated after licensing and receipt of site access, at the start of engineering design. Results from the Geologic Mapping work will be submitted concurrently with the Phase II Site Investigations Report outlined in PDF GEO-1.
Surface Water		
MM SW-1. On-site Studies of Acid Production Potential. When access is granted to the Licensee for the purpose of collecting samples, the field and analytical program will be undertaken as described in the Phase I Site Investigations detailed in Section 12.1	Licensee, in consultation with State Water Board.	Results from the APP studies will be submitted concurrently with the Phase I Site Investigations Report outlined in PDF GEO-1.

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of the Final EIR. This program will: 1. Obtain samples from each pit (upper and lower) across the stratigraphic section (porphyritic quartz monzonite, upper quartzite, middle quartzite, schistose meta arkose, vitreous quartzite, and the ore zones). 2. Perform analysis for total sulfur, pyrite sulfur, and sulfate sulfur (ASTM Method 1915-97 (2000) for total sulfur, and ASTM 1915-99 method E (2000) for sulfide sulfur). 3. Calculate acid production potential (APP) by the method of Sobek et al. (1978) and calculate acid production. 4. Determine the neutralization potential (NP) by the method of Sobek et al. (1978). Calculate the net neutralizing potential (NNP): NNP = NP – APP expressed as kilogram calcium carbonate/ton. In the event that APP is found, water treatment will be added to the treatment program, consisting of one or more of the following strategies: • Use of limestone, hydrated lime, soda ash, or other similar neutralizing substances to increase pH of the water • Increased seepage control to reduce seepage through the reservoir • Construction of limestone drains or limestone ponds to treat water • Modifications to the RO system to increase pH Phase I Site Investigations will begin after the FERC license is granted, site access is obtained, and regulatory agencies have granted approval for ground disturbing activities.		Water treatment for acid production, if needed, will be conducted for the life of the Project.

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Performance Standard: As a performance standard, the proposed Project must not cause or contribute to the degradation of background water quality of the aquifer, as required by the Region 7 Colorado River Water Quality Control Plan. Water quality in the reservoirs will be maintained at the existing quality of the source groundwater.		
See **PDF GW-2. Water Treatment Facility.**	-- --	
See **MM GW-6. Water Quality Sampling.**	-- --	
See **MM GEO-1. Erosion Control Plan**.	-- --	
Groundwater		
MM GW-1. Groundwater Level Monitoring. A groundwater level monitoring network will be installed to confirm that Project pumping is maintained at levels that are in the range of historic pumping. The monitoring network will consist of both existing and new monitoring wells to assess changes in groundwater levels beneath the Colorado River Aqueduct (CRA), and the Pinto Valley Groundwater Basin, as well as in areas east of the Project water supply wells. Table 3.3-10 of the Final EIR lists the proposed monitoring network and Figure 3.3-17 of the Final EIR shows its proposed locations. In addition to the proposed monitoring wells, groundwater levels, water quality, and production will be recorded at the Project pumping wells. The Project will report the static water levels beneath each of the Project's production wells annually along with a reference either to the accounting surface as proposed by USGS in 2008 or to a valid accounting surface methodology set forth in future legislation, rule-making or applicable judicial determination. A "static water level" shall be when the well has been idle for an equal time that it has been pumping or the measurement taken after the longest period of Project non-pumping. If monitoring indicates that groundwater is being drawn down at greater levels and faster rates than expected (exceeding the "Maximum Allowable Changes" identified in Table 3.3-9 of the Final EIR), pumping rates for the initial fill will be reduced to a level that meets the levels specified in Table 3.3-9 of the Final EIR. The initial	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with State Water Board.	Within 6 months of license issuance, the Applicant shall submit a Groundwater Level Monitoring Plan to the Deputy Director for Water Resources (Deputy Director) for approval. No pumping shall commence until the Groundwater Level Monitoring Plan is approved by the Deputy Director. The Deputy Director may require modifications as part of the approval. Monitoring should commence prior to onset of groundwater pumping for the Project. All monitoring conducted as part of the Groundwater Level Monitoring Plan shall be submitted to the State Water Board within 30 days after each sampling event and annually in a summary report. Groundwater level monitoring will continue for the life of the Project.

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fill period would therefore be extended to a maximum of 4.5 to 6 years.		
MM GW-2. Well Monitoring. Wells on neighboring properties whose water production may be impaired by Project groundwater pumping will be monitored quarterly at a minimum during the initial fill pumping period and for at least 4 years following the initial fill. Monitoring will be semi-annual, at a minimum, for the remainder of the Project. If it is determined that Project pumping is lowering static water levels in those wells by 5 feet or more, the Project will replace or lower the pumps, deepen the existing well, construct a new well, and/or compensate the well owner for increased pumping costs to maintain water supply to those neighboring properties.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with State Water Board.	Well monitoring will begin in the Pre-construction period and continue for the life of the Project. The Licensee will submit groundwater monitoring results as part of an Annual Project Summary report to the State Water Board and provide copies to interested parties upon request. The Deputy Director may modify this monitoring and reporting requirement.
MM GW-3. Extensometers. Two extensometers shall be constructed to measure potential inelastic subsidence that could affect operation of the CRA; one in the upper Chuckwalla Valley near OW-3 and the other in the Orocopia Valley near OW-15. Figures 3.3-17 and 3.3-18 of the Final EIR show the locations of the extensometers. In the unlikely event that the data show inelastic subsidence is occurring due to Project groundwater pumping the Project will eliminate inelastic subsidence by: • Redistributing pumping by constructing additional wells and modifying the pumping rates to reduce drawdown. • Reducing pumping or by artificially increasing recharge in order to better match the net annual groundwater withdrawal to the net annual recharge. If structures are impacted, they will be mitigated to pre-subsidence condition through engineered solutions that may consist of re-leveling, placement of compacted fill, soil-cement, pressure grouting, installation of piles and grade-beams, or steel-reinforcement. As necessary, portions or all of the impacted structure will be repaired or replaced in consultation with Metropolitan Water District of Southern California (MWD).	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with State Water Board.	Extensometers will be installed during the Pre-construction period and will be maintained and monitored for the life of the Project. The Licensee will submit subsidence monitoring results as part of an Annual Project Summary report to the Agencies and provide copies to interested parties upon request. The Deputy Director may modify this monitoring and reporting requirement.

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MM GW-4. Lower Reservoir Seepage Recovery Wells. Seepage from the Lower Reservoir will be extracted through seepage recovery wells. The proposed recovery well locations are shown on Figure 3.3-18 of the Final EIR. Seepage from the Lower Reservoir will be maintained to prevent a significant rise in water levels beneath the CRA or a rise in groundwater that could potentially impact the liner of the proposed landfill. Target water levels have been assigned to the monitoring wells as shown in Table 3.3-10 of the Final EIR. Aquifer tests will be performed during final engineering design to confirm the seepage recovery well pumping rates and aquifer characteristics. The tests will be performed by constructing one of the seepage recovery wells and pumping the well while observing the drawdown in at least two seepage recovery or monitoring wells. Upon completion of this testing, the model will be re-run and the optimal locations of the remainder of the seepage recovery wells will be determined to effectively capture water from the Lower Reservoir and maintain groundwater level changes at less than significant levels beneath the CRA and the liner of the proposed landfill. Groundwater monitoring will be performed on a quarterly basis for the first 4 years of Project pumping. This program may be modified to bi-annually or annually depending on the findings as approved by the State Water Board and FERC. Annual reports will be prepared and distributed to interested parties. If needed based upon monitoring results, and acceptable based upon water quality monitoring results, as an adaptive management measure Project pumping drawdown can be mitigated by allowing seepage from the reservoirs without pump-back recovery, which, if left unimpeded, could raise groundwater levels beneath the CRA by up to 3 feet. *Performance Standard:* Seepage from the Lower Reservoir will be maintained to prevent a significant rise in water levels beneath the CRA or a rise in groundwater that could potentially impact the liner of the proposed landfill. Seepage from the Lower Reservoir will be managed to maintain groundwater levels at least five feet below the bottom elevation of the liner of the proposed landfill so that the landfill can comply with title 27 CCR Section 20240, subdivision (c) requirements. Target levels have been assigned to the monitoring	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with State Water Board.	Seepage recovery wells will be designed during final engineering, built during construction, and maintained for the life of the Project. Seepage monitoring for groundwater levels and groundwater quality will be performed quarterly. Sampling results will be submitted to the Deputy Director and interested parties in the Annual Project Summary report. The Deputy Director may modify this monitoring and reporting requirement.

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wells as shown in Table 3.3-10 of the Final EIR.		
MM GW-5. Upper Reservoir Seepage Recovery Wells. Seepage from the Upper Reservoir will be controlled through a separate set of seepage recovery wells, locations of which are shown on Figure 3.3-18 of the Final EIR. Seepage from the Upper Reservoir will be maintained at least five feet below the bottom elevation of the proposed landfill project liner. Target levels have been assigned to the monitoring wells as shown in Table 3.3-10 of the Final EIR. A testing program will also be employed for seepage recovery wells for the Upper Reservoir to assess the interconnectedness of the joints and fractures and the pumping extraction rate. Drawdown observations will be made in nearby observation wells to support final engineering design. Groundwater monitoring will be performed on a quarterly basis for the first four years of Project pumping. This program may be extended to bi-annually or annually depending on the findings. Annual reports will be prepared and distributed to interested parties. Based upon testing for final design, or if indicated by groundwater level monitoring, additional seepage extraction wells may be constructed to meet target groundwater levels listed in Table 3.3-10 of the Final EIR. PDF GW-1 would also apply should water levels approach target levels listed in Table 3.3-10 of the Final EIR. Based upon testing for final design, or if indicated by groundwater level monitoring, additional seepage extraction wells may be constructed. *Performance Standard:* Seepage from the Upper Reservoir will be managed to maintain groundwater levels at least five feet below the bottom elevation of the liner of the proposed landfill so that the landfill can comply with title 27 CCR Section 20240, subdivision (c) requirements. Target levels have been assigned to the monitoring wells as shown in Table 3.3-10 of the Final EIR.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with State Water Board.	Seepage recovery wells will be designed during final engineering, built during construction, and maintained for the life of the Project. Seepage monitoring for groundwater levels and groundwater quality will be performed quarterly. Sampling results will be submitted to the Deputy Director and interested parties in the Annual Project Summary report. The Deputy Director may modify this monitoring and reporting requirement.
MM GW-6. Water Quality Sampling. Water quality sampling will be done at the source wells, and within the reservoirs, and in monitoring wells upgradient and downgradient of the reservoirs and brine disposal lagoon consistent with applicable portions of California Code of Regulations Title 27. Figure 3.3-18 of the Final EIR shows the proposed locations of these wells. The Licensee shall prepare	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with State Water Board.	Well monitoring will begin in the pre-construction period and will be conducted for the life of the Project. The Licensee will submit groundwater monitoring results as part of an Annual Project Summary report to the State Water

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and implement a site-specific monitoring and reporting plan for groundwater and surface waters which will specify the location and timing of water quality monitoring, and constituents to be monitored. Monitoring will be done on a quarterly basis for the first four years and may be reduced to biannually thereafter based on initial results. Results of the sampling will be used to adjust water treatment volume, and to add or adjust treatment modules for TDS and other potential contaminants as needed to maintain groundwater quality under the direction of the State Water Board and FERC. Groundwater quality monitoring results will be made available to MWD upon request. *Performance Standard*: As a performance standard, the proposed Project: 1) must not cause or contribute to the degradation of background water quality; and 2) water quality in the reservoirs will be maintained at the existing quality of the source groundwater.		Board and provide copies to interested parties upon request. The Deputy Director may modify this monitoring and reporting requirement.
MM GW-7. Replacement Wells. Existing wells located within the central and eastern mining pits which are to be developed as Project reservoirs, will be replaced at locations outside of the reservoirs as shown on Figure 3.3-18 of the Final EIR. Table 3.3-10 of the Final EIR lists those wells scheduled for replacement.	Licensee/Environmental Coordinator in consultation with State Water Board.	Replacement wells will be constructed during the construction period.
PDF GW-1. Groundwater Seepage. The Licensee will limit seepage from the Project reservoirs to the extent feasible using specified grouting, seepage blankets, and roller compacted concrete (RCC) or soil cement treatments. This includes the Upper Reservoir, Lower Reservoir, and the brine disposal ponds that will be part of the water quality management system for the Project. Final design for seepage control will be approved by the State Water Board and FERC prior to construction. Seepage control from the Project reservoirs will be accomplished using systematic procedures such as design and construction control measures that will include the following: • During final engineering design, a detailed reconnaissance of the reservoir basins and pond areas will be conducted to identify zones where leakage and seepage would be expected to occur. These areas will include faults, fissures and cracks in the bedrock, and zones that may have direct	Licensee in consultation with State Water Board.	The Licensee shall submit a 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 approval. The Seepage Management Plan should be reviewed and updated by the Licensee no less than every two years. 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.

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connection to the alluvial deposits of the Chuckwalla Valley. During the reconnaissance, the effectiveness of various methods for seepage and leakage control to mitigate the effects of these particular features will be evaluated, including grouting, seepage blankets, and RCC or soil cement treatments, and other methods if needed. • Methods for seepage and leakage control will include curtain grouting of the foundation beneath the dam footprint and around the reservoir rim, as needed; backfill concrete placement and/or slush grouting of faults, fissures, and cracks detected in the field reconnaissance; placement of low permeability materials over zones too large to be grouted and over areas of alluvium within the Lower Reservoir; seepage and leakage collection systems positioned based upon the results of the hydrogeologic analyses; and clay or membrane lining of the brine ponds associated with the Project's water quality management system. The collection systems would recycle water into the Project reservoirs or the reverse osmosis (RO) system. • Design and construction of a Comprehensive Monitoring Program, consisting of observation wells and piezometers that will be used to assess the effectiveness of the seepage and leakage control measures. • Based on monitoring results, additional actions may be taken to further control leakage and seepage from the reservoirs and ponds. Such measures may include curtain grouting and the expansion of seepage and leakage collection systems. • Other measures, such as use of stepped RCC or soil cement overlay on the eastern portion of the Lower Reservoir, may also be used depending on results of final engineering design analyses. • In addition, portions of the tunnels and shaft of the Project will experience very high water pressures; whereas, current plans are based on lining of the tunnels with concrete, and		

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in some locations steel liners will be installed. These liners will also effectively block seepage from occurring.		
PDF GW-2. Water Treatment Facility. In order to maintain TDS at a level consistent with existing groundwater quality, a water treatment plant using a RO desalination system and brine disposal lagoon will be constructed as a part of the Project to remove salts and metals from reservoir water and maintain TDS concentrations equivalent to the source groundwater. Treated water will be returned to the Lower Reservoir while the concentrated brine from the RO process will be directed to brine ponds. In addition to removing salts from the water supply, other contaminants, nutrients, and minerals, if present, would be removed, preventing eutrophication from occurring. Salts from the brine disposal lagoon will be removed and disposed of at an approved facility when the lagoons become full, approximately every 10 years. The lagoons will be maintained in a wetted condition, to maintain air quality in the Project area.	Licensee, in consultation with State Water Board.	Prior to construction, the Applicant shall submit a Water Treatment, Waste Management, Storage, and Disposal Plan to the Deputy Director for approval. Project construction shall not begin until the plan is approved by the Deputy Director.
Agricultural and Forestry Resources		
No mitigation required.	--	--
Biological Resources		
MM BIO-1. Biological Mitigation and Monitoring Program. Concurrent with final engineering design a comprehensive site-specific biological mitigation and monitoring program shall be verified and implemented in consultation with the Biological Technical Advisory Team. The Technical Advisory Team shall be composed of the Licensee's Environmental Coordinator and consultants, and staff from the resource managing agencies (BLM, USFWS, and CDFW).	Licensee (Environmental Coordinator/ Biological Technical Advisory Team/Project Biologist) in consultation with CDFW and State Water Board.	The Biological Technical Advisory Team will be formed at the initiation of Project design. The site-specific biological mitigation and monitoring program will be verified during final engineering and implemented during construction and operation.
MM BIO-2. Biological Reporting to Resource Agencies. As part of implementing protection measures, regular reports shall be submitted to the relevant resource agencies to document the Project activities, mitigation implemented and mitigation effectiveness. As a	Licensee (Environmental Coordinator/ Biological Technical Advisory Team/Project Biologist) in	Biological reporting will be initiated during final engineering and continued for the life of the Project.

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performance standard, adaptive management recommendations shall be updated as needed and in consultation with the coordinating agencies. Reporting shall include monthly reports during construction, annual comprehensive reports, and special-incident reports. The Project Biologist shall be responsible for reviewing and signing reports prior to submittal to the agencies.	consultation with CDFW and State Water Board.	
MM BIO–3. Designation of an Authorized Project Biologist. An Authorized Project Biologist approved of by the SWRCP and CDFW shall be responsible for implementing and overseeing the biological compliance program. This person shall be sufficiently qualified to ensure approval by the USFWS and the CDFW for all biological protection measures that may be implemented by the Project. The USFWS describes a single designation for biologists who can be approved to handle tortoises - "Authorized Biologist." Such biologists have demonstrated to the USFWS that they possess sufficient desert tortoise knowledge and experience to handle and move tortoises appropriately. Authorized Biologists are permitted to then approve specific monitors to handle tortoises, at their discretion. The CDFW must also approve such biologists, potentially including individual approvals for monitors approved by the Authorized Biologist.	Licensee (Environmental Coordinator/ Biological Technical Advisory Team/Project Biologist) in consultation with CDFW and State Water Board.	The Project biologist will be designated during engineering and will continue through the life of the Poject.
MM BIO-4. Worker Environmental Awareness Program. A Worker Environmental Awareness Program (WEAP) (*see* Section 12.14 of the Final EIR) shall be implemented to ensure that Project construction and operation occur within a framework of safeguarding environmentally sensitive resources. Although facility construction has the greatest potential to harm environmental resources, the WEAP shall be designed to address those environmental issues that pertain to Project operations, such as general conduct, repairs and maintenance. All project workers will be required to attend the program. The WEAP shall include information on biological resources that may occur on the site, with emphasis on listed and special-status species. Education shall include, but not be limited to, ecology, natural history, endangerment factors, legal protection, site mitigation measures, and hierarchy of command. Site rules of	Licensee (Environmental Coordinator/ Contractor) in consultation with CDFW and State Water Board.	The WEAP will be finalized prior to the start of construction and implemented during construction and operation for the life of the project.

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conduct shall be identified, including but not limited to: speed limits, work areas that must be accompanied by a biological monitor, parking areas, looking under parked vehicles prior to moving them, trash deposition, off-site conduct in the area of the Project, and other employee response protocols. Willful non-compliance shall result in sufficiently severe penalties to the contractor that the contractor may dismiss the offending employee. The educational format will be a video, shown initially by the Project Biologist and ultimately by a limited staff of trained and approved personnel. The Project Biologist also may be videotaped giving the first program, for assistance to further instructors. All workers completing the education program shall be given a wallet card with site "rules" and contact cell phone numbers, and an environmental training completion sticker to affix to their hard hat. Each shall sign a sheet attesting to completing the training program.		
MM BIO-5. Minimize Surface Disturbance. During construction in native habitats, all surface disturbance shall be restricted to the smallest area necessary to complete the construction. New spur roads and improvements to existing access roads shall be designed to preserve existing desert wash topography and flow patterns.	Licensee (Environmental Coordinator/ Contractor) in consultation with CDFW and State Water Board.	Construction
MM BIO-6. California Desert Native Plants Act. In compliance with the California Desert Native Plants Act (CDNPA), the County Agricultural Commissioner shall be consulted for direction regarding disposal of plants protected by the CDNPA. This may include salvage for subsequent revegetation of temporarily disturbed areas on-site, salvage by an approved nursery, landscaper or other group, or landfill disposal.	Licensee (Project Biologist/Contractor) in consultation with the County Agricultural Commissioner and State Water Board.	Final Engineering/Construction
MM BIO-7. Revegetation Plan. A revegetation plan (*see* Section 12.14 of the Final EIR) shall be implemented for areas that are temporarily disturbed during construction. In order to accommodate the specific features of the desert that make revegetation difficult – namely lack of predictable rainfall, lack of an "A" soil horizon, and the difficulty of re-establishing a soil community of micro-organisms	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	The Revegetation Plan will be implemented during and after construction.

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– a detailed Revegetation Plan shall address the following measures and include: • Quantitative identification of the baseline community, both annual, herbaceous perennial and woody perennial species. • Soil salvage and replacement on areas to be revegetated. • Final site preparation and grading to include features that enhance germination and growth of native species. This includes surface pitting for the accumulation of sediments, water and seed and the construction of small swales for such species as California ditaxis and desert unicorn plant, which are commonly found in road swales and shoulders. All disturbed washes shall be recontoured to eliminate erosion and encourage the reestablishment of the drainage to its pre-construction condition. • Vertical mulching and other techniques to promote a hospitable environment for germination and growth. • Seeding and/or planting of seedlings of colonizing species. • Development of a soil micro-community by inoculation of mycorrhizal fungi and planting species that develop a mycorrhizal net. • Wee d control. • Initial irrigation, if necessary. • A realistic schedule of regrowth of native species, and remedial measures, if needed. • Monitoring and reporting.		
MM BIO-8. Invasive Species Monitoring and Control. To minimize the spread of invasive non-native vegetation a weed control program shall be implemented during construction. This program (*see* Section 12.14 of the Final EIR) includes: • Baseline surveys for weed species that are present and/or are most likely to invade the Project site and surrounding	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	The Invasive Species Monitoring and Control Program will be implemented during construction and operation.

Mitigation Program	Responsible Party	Timing for Mitigation
area. • Methods quantifying weed invasion. • Methods for minimizing weed introduction and/or spread. • Triggers which prompt weed control. • Methods and a schedule for weed control and eradication. • Success standards. Pesticides will be used in accordance with label directions.		
MM BIO-9. Couch's Spadefoot. The Northern and Eastern Colorado Desert Coordinated Management **(**NECO) Plan requirements shall be implemented to avoid disturbance of impoundments and restriction of surface flow to impoundments. Surveys on the Central Project Area shall elucidate the presence of any artificial impoundments that could subsidize Couch's spadefoot reproduction. Should those exist then surveys shall be conducted at the appropriate time to determine if larvae are present. If present, the impoundment will be avoided, if possible. If avoidance is not possible, then a new impoundment will be constructed as close as is feasible, to replicate and replace each lost impoundment with similar characteristics. All larvae shall be removed to the new impoundment. During construction on all Project facilities, should ephemeral pools develop in response to intense rainfall showers from early spring through fall these shall be examined for larvae of Couch's spadefoot. If larvae are present, the pools shall be flagged and avoided by construction activities. Where pools cannot be avoided, new pools shall be constructed and larvae transplanted under the supervision of the Project Biologist.	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	Pre-construction surveys and construction monitoring.
MM BIO-10. Breeding Bird Surveys and Avoidance. For all construction activities in vegetated habitat that are scheduled to occur between approximately February 15 and July 30, surveys shall be completed in all potential nesting sites for active bird nests. Unless otherwise directed by the CDFW, if an active bird nest is located, the nest site shall be flagged or staked a minimum of 5	Licensee (Project Biologist) in consultation with CDFW and State Water Board.	Pre-construction survey, with avoidance during construction.

Mitigation Program	Responsible Party	Timing for Mitigation
yards in all directions. This flagged zone shall not be disturbed until the nest becomes inactive. Alternatively, grading and site preparation may occur prior to February 15 to preclude interference with nesting birds.		
MM BIO-11. Brine Ponds Management. Brine ponds shall be managed to minimize their attractiveness and access to migratory birds. This consists of making resources provided by the ponds less available to birds through their design (steep slopes to discourage wading birds, etc.) and netting the ponds to prevent access by birds (Figure 3.5-19 of the Final EIR).	Licensee (Project Biologist) in consultation with CDFW and State Water Board.	Brine ponds will be built during construction and maintained for the life of the Project.
MM BIO-12. Burrowing Owls Phase III Survey. Based on the results of the 2009 surveys, a Phase III survey shall be completed to further assess bird use of the Project area and potential impacts if required by the CDFW (CBOC, 1993). This includes a nesting season survey, followed by a winter survey if no burrows or owls are observed during the nesting season. Each of these surveys shall spans several visits and days. A pre-construction survey shall be conducted within 30 days of the start of Project construction to assess species presence and the need for avoidance. In consultation with the CDFW, the pre-construction survey may obviate the need for the Phase III Survey (see MM BIO-13).	Licensee (Project Biologist) in consultation with CDFW and State Water Board.	Pre-construction
MM BIO-13. Burrowing Owl Breeding Season. The NECO Plan limits the construction period to September 1 through February 1 if burrowing owls are present, to avoid disruption of breeding activities. Following CDFW (1995) guidance, mitigation measures for resident owls will be implemented: • Disruption of burrowing owl nesting activities shall be avoided during construction. • Active nests shall be avoided by a minimum of a 250-foot buffer until fledging has occurred (February 1 through August 31.) • Following fledging, owls may be passively relocated.	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	Construction

Mitigation Program	Responsible Party	Timing for Mitigation
MM BIO-14. Raptor Buffer. The NECO Plan identifies ¼-mile as an important buffer distance for prairie falcon or golden eagle aerie. No aeries or nests have been observed within a ¼-mile, but pre-construction surveys on the Central Project Area will confirm if any raptor aeries are within ¼-mile of construction. If so, a ¼-mile construction buffer will be required during the nesting seasons.	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	Pre-construction and construction.
MM BIO-15. Bat Survey. The following applicable measures are required by the NECO Plan: • Survey for bat roosts within 1 mile of a project, or within 5 miles of any permanent stream or riparian habitat on a project site. • Projects authorized within 1 mile of a significant bat roost site would have applicable mitigation measures, including, but not restricted to seasonal restrictions, light abatement, bat exclusion, and gating of alternative sites. Any exclusion must be performed at a non-critical time, by an authorized bat biologist. Pre-construction bat surveys shall be completed by a qualified bat biologist to determine the existence, location and condition of bat roosts on the site. Because foraging areas used by resident bats may be critical to the functioning of those colonies, foraging habitat within the Project lands will be identified. If needed, based on the results of these surveys, actions will be taken to avoid roosting and foraging impacts to resident bats, minimize that disturbance or, as an inescapable measure, evict bats. These actions shall include (as relevant): • Designation of avoidance areas and associated measures. • Eviction of bats outside of the maternity season. • A monitoring program to determine impacts from the Project. • Extending the monitoring program for the brine ponds to include bats, as deemed necessary.	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	Pre-construction bat survey, with bat mitigation plan and monitoring (if needed) during construction.

Mitigation Program	Responsible Party	Timing for Mitigation
MM BIO-16. Wildlife Fencing. The NECO Plan recommends fencing potential hazards to bighorn sheep. A security fence shall be constructed around portions of the Central Project Area to *exclude larger terrestrial wildlife* – bighorn sheep, deer, coyotes, foxes, badgers – from entering Project areas that could pose a hazard to these species (Figure 3.6-4 of the Final EIR). Such areas shall include the transmission switchyard and other structures that may be dangerous to wildlife. Where exclusion fencing is required, security gates will remain closed except during specific vehicle entry and may be electronically activated to open and close immediately after vehicle(s) have entered or exited. Permanent security fences will be installed around the Upper and Lower reservoirs, switchyard and brine ponds, for security, safety and general liability purposes, and will prevent wildlife access. These fences will also be equipped with tortoise exclusion fencing. In addition, temporary tortoise exclusion fences will be installed around work zones during construction, and will be sufficiently low (3 feet) to permit passage by sheep. These temporary fences will be removed at the end of construction. Figure 3.6-4 of the Final EIR shows the concept for the temporary construction fencing. If additional fencing is needed during construction to protect tortoises, this fencing will be installed and maintained during the construction period. All required exclusion fencing shall be maintained for the life of the Project. All fences will be inspected monthly and during/following all major rainfall events. Any damage to the fencing shall be temporarily repaired immediately, followed by permanent repair within 1 week.	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	Wildlife fencing will be constructed at the beginning of the construction period, with permanent fences maintained for the life of the Project.
MM BIO-17. Construction and Operation Restricted Areas. Construction and maintenance activities shall be restricted to minimize biological Project impacts. These restrictions shall include vehicle speed limits on both paved and dirt roads (the speed limit shall be based on County regulations); avoidance areas, work areas in which workers must be accompanied by a biological monitor, specified parking areas, trash deposition, repair, and refueling areas; looking under parked vehicles prior to movement; and the appropriate response upon finding a special-status species. For	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	Construction/Life of the Project

Mitigation Program	Responsible Party	Timing for Mitigation
construction, this will include the entire construction period. For operations, this will apply to scheduled and unscheduled maintenance activities.		
MM BIO-18. Construction during Daylight Hours. The NECO Plan requires that, in areas without wildlife exclusion fencing or those areas that have not been cleared of tortoises, construction activities will only take place during daylight hours. This permits avoidance of construction-related mortalities of fossorial, diurnal species such as the desert tortoise, or nocturnally active species, such as the desert rosy boa.	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	Construction
MM BIO-19. Construction of Pipeline Trenches. The NECO Plan identifies that pipeline trenches must be closed, covered, and/or inspected. Pipeline trenches shall be closed, temporarily fenced, or covered each day. Each day, any open trenches shall be inspected by an approved biological monitor, under the supervision of the Authorized Biologist, at first light, midday, and at the end of each day to ensure animal safety. Ramps shall be provided to encourage animals to escape on their own. The biological monitor shall be confirmed by the Approved Project Biologist.	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	Construction
MM BIO-20. Minimize Nighttime Lighting Impacts. Facility lighting will be designed, installed, and maintained to prevent casting of nighttime light into adjacent native habitat. *See also* MM AES-1.	Licensee (Environmental Coordinator/ Contractor) in consultation with CDFW and State Water Board.	Minimized lighting will be installed during construction and maintained for the life of the Project
MM BIO-21. Dry Desert Washes. There are many small washes crossed by the pipeline and transmission line that are regulated by the CDFW. A Streambed Alteration Agreement (Section 1602 of the Fish and Game Code) shall be obtained, which will identify the condition and location of all state jurisdictional waters, impacts, and mitigation measures. Mitigation includes the acreage assessment of washes that may be affected, construction requirements associated with working on or near the washes, and compensation for lost or damaged acreage. It is anticipated that this compensation will be included in the habitat compensation for special-status species (MM BIO-22 and MM TE-6).	Licensee (Environmental Coordinator/ Biological Technical Advisory Team/Project Biologist) in consultation with CDFW and State Water Board.	Engineering design (designs will establish proper desert wash crossings). Habitat compensation will be established during Project engineering.

Mitigation Program	Responsible Party	Timing for Mitigation
MM BIO-22. Habitat Compensation. CDFW standard off-site compensation for loss of occupied burrowing owl habitat consists of a minimum of 6.5 acres of lands, approved by CDFW and protected in perpetuity, for each pair of owls or unpaired resident bird. In addition, existing unsuitable burrows on the protected lands should be enhanced (i.e., cleared of debris or enlarged) or new burrows installed at a ratio of 2:1. Habitat compensation for burrowing owls, if needed, will be subsumed by compensation for lost desert tortoise habitat, which also constitutes burrowing owl habitat. The NECO Plan requires compensation for disturbance of Desert Dry Wash Woodland in WHMAs at the rate of 3:1. The Project does not disturb any Desert Dry Woodland inside a WHMA. However, the compensation for desert tortoise habitat that is lost to the Project will compensate for the loss of Desert Dry Wash Woodland expected to be lost or disturbed during construction activities.	Licensee (Environmental Coordinator/ Biological Technical Advisory Team/Project Biologist) in consultation with CDFW and State Water Board.	Construction/Life of the Project
PDF BIO-1. Pre-construction Special Species and Habitat Survey. Following licensing and access to the Central Project Area, surveys for special species and habitats that could support special species will be conducted. A thorough examination of the Central Project Area and local springs and seeps will provide information to determine if any avoidance or adaptive management is required. Simultaneously, the site will be assessed for use by other wildlife. Based on the results of these surveys, the biological mitigation and monitoring program will be modified in ongoing consultation with the USFWS and the CDFW. Reporting requirements for the pre-construction surveys are specified in MM BIO-2.	Licensee (Project Biologist/Contractor) in consultation with USFWS, CDFW and State Water Board.	The Licensee shall conduct sensitive species surveys after it has gained access to the Central Project Area. Any modifications to protection measures should be developed in consultation with USFWS and CDFW and presented in a Wildlife Protection Plan. The Wildlife Protection Plan must be approved by USFWS and CDFW, and provided to the Deputy Director ffor approval before starting construction. No construction activities may commence until the Wildlife Protection Plan is approved by the Deputy Director.
PDF BIO-2. Pre-construction Plant Survey. Preconstruction surveys will identify special-status plant populations and also species protected by the CDNPA. For annuals or herbaceous perennials that are dormant during certain seasons, data from 2008, 2009, and 2010 surveys will be used to assist in locating populations during dormant seasons. Based on these combined surveys, avoidance areas in construction zones will be established for special plant resources. The perimeters will be marked with wooden stakes,	Licensee (Project Biologist/Contractor) in consultation with USFWS, CDFW and State Water Board.	The Licensee shall conduct sensitive species surveys after it has gained access to the Central Project Area. Any modifications to protection measures should be developed in consultation with USFWS and CDFW and presented in a Wildlife Protection Plan. The Wildlife Protection Plan must be approved by

Mitigation Program	Responsible Party	Timing for Mitigation
at least 3 feet high, and no more than 10 feet apart. Each stake will be flagged with red and white candy-striped flagging or other obvious barrier tape. Where avoidance is not feasible, and the species can be reasonably transplanted (e.g., foxtail cactus, Wiggins' cholla, other cacti and species protected by the CDNPA), plants will be salvaged and transplanted in areas approved in the Re-Vegetation Plan. Transplantation will be part of the Re-Vegetation plan developed for the Project. Salvaging seed and replanting may be an option considered for certain species (e.g., smoke tree, ironwood).		USFWS and DFG, and provided to the Deputy Director for approval before starting construction. No construction activities may commence until the Wildlife Protection Plan is approved by the Deputy Director.
PDF BIO-3. Pre-construction Mammals Surveys. Prior to construction, surveys will be conducted for all burrows that might host a badger or kit fox. (These surveys can be simultaneous with those for desert tortoise burrows.) Active burrows and all fox natal dens will be avoided, where possible. The perimeters of all avoidance areas will be marked with wooden stakes, at least 3 feet high, and no more than 10 feet apart. Each stake will be flagged with red and white candy-striped flagging or other obvious barrier tape. Where avoidance is infeasible, occupancy of burrows will be determined through fiberoptics and/or night vision equipment. All occupants will be encouraged to leave their burrows using one-way doors, burrow excavation in the late afternoon/early evening (to encourage escape at night), or other approved methods. All burrows from which badgers or foxes have been removed will be fully excavated and collapsed to ensure that animals cannot return prior to or during construction.	Licensee (Project Biologist/Contractor) in consultation with USFWS, CDFW and State Water Board.	The Licensee shall conduct sensitive species surveys after it has gained access to the Central Project Area. Any modifications to protection measures should be developed in consultation with USFWS and CDFW and presented in a Wildlife Protection Plan. The Wildlife Protection Plan must be approved by USFWS and CDFW, and provided to the Deputy Director for approval before starting construction. No construction activities may commence until the Wildlife Protection Plan is approved by the Deputy Director.
PDF BIO-4. Avian Protection of Transmission Line. The Licensee will develop an avian protection plan in consultation with the U.S. Fish and Wildlife Service (USFWS). The plan will: meet Avian Power Line Interaction Committee/Fish and Wildlife Service (APLIC/FWS) guidelines for an avian protection plan; present designs to reduce potential for avian electrocution and collisions; provide methods for surveying and reporting Project-related raptor mortality and managing nesting on the proposed transmission lines; and include a workers education program.	Licensee/Project Biologist/Contractor in consultation with USFWS, CDFW and State Water Board.	Avian protection measures will be developed during engineering design, implemented during construction, and maintained for the life of the Project.

Mitigation Program	Responsible Party	Timing for Mitigation
The raptor-friendly transmission lines will be developed in strict accordance with the industry standard guidelines set forth in *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006*, by Avian Power Line Interaction Committee, Edison Electric Institute, and Raptor Research Foundation and the USFWS-approved Avian and Bat Protection Guidelines. The design plan (filed for FERC approval) will include adequate insulation, and any other measures necessary to protect bats and raptors from electrocution hazards.		
Threatened & Endangered Species		
MM TE-1. Desert Tortoise Pre-construction Surveys and Clearance Surveys. Desert tortoises shall be removed from construction areas by the Project Biologist. Such tortoises shall be processed (cataloged, photographed, and numbered) prior to placement outside the construction zones on public or private land, or the Project ROW [right of way] (*see* Appendix C, Section 12.14 of the Final EIR, Revised Desert Tortoise Clearance and Relocation/Translocation Plan). On the linear facilities, this is achieved by first surveying for all desert tortoises that might be within construction zones or are likely to enter construction zones, immediately prior to the start of construction. These surveys can be simultaneous with those for badger and kit fox. Active burrows will be identified, measured, and the entrance "gated" (a 3-inch twig inserted into the floor of the runway) for monitoring tortoise use. The locations of all desert tortoises will be mapped so that those locations can be monitored for tortoise use during construction. On the Central Project Area, there is little likelihood of desert tortoises except along the southern and eastern edges because of the altered landscape and massive and abundant tailings piles. Surveys first will be conducted in the Central Project Area to determine the presence of desert tortoise. If there is any suggestion of tortoise presence, either due to the presence of tortoise habitat and/or tortoise sign, a clearance survey (*see* Appendix C, Section 12.14 of the Final EIR, Revised Desert Tortoise Clearance and Relocation/Translocation Plan) will be completed in those areas after tortoise-proof fencing is installed (*see* MM TE-3: Desert Tortoise	Licensee (Project Biologist) in consultation with CDFW and State Water Board.	Pre-construction survey

Mitigation Program	Responsible Party	Timing for Mitigation
Exclusion Fencing). A minimum of two clearance passes will be completed. Surveys will coincide with heightened tortoise activity, from mid-March to mid-April and during October. This will maximize the probability of finding all tortoises. Any tortoises found will be removed per mitigation MM TE-4: Revised Desert Tortoise Clearance and Relocation/Translocation Plan. Surveys and clearance on the substation will proceed identically to that on the Central Project Area, with the exception that a pre-construction survey prior to clearance surveys is not necessary.		
MM TE-2. Desert Tortoise Construction Monitoring. No construction in unfenced areas (*see* MM TE-3: Desert Tortoise Exclusion Fencing) on the linear facilities will occur without biological monitors. This includes both construction monitoring and maintenance activities that require surface disturbance. An adequate number of trained and experienced monitors must be present during all construction activities, depending on the various construction tasks, locations, and season. The Northern and Eastern Colorado Desert Coordinated Management (NECO Plan) suggests that construction activities occur when tortoises are inactive–November 1 to March 15–where possible. However, adequate monitoring will mitigate concerns about take due to heightened activity levels the remainder of the year. All desert tortoises will be removed from harm's way by a biologist approved by the Project Biologist (MM BIO-2). The Project Biologist must be sufficiently qualified to ensure approval by USFWS and CDFW for all tortoise protection measures that may be implemented by the Project. USFWS describes a single designation for biologists who can be approved to handle tortoises, "Authorized Biologist." Such biologists have demonstrated to USFWS that they possess sufficient desert tortoise knowledge and experience to handle and move tortoises appropriately. Authorized Biologists are permitted to then approve specific monitors to handle tortoises, at their discretion. The CDFW must also approve such biologists, potentially including individual approvals for monitors approved by the Authorized Biologist. Active burrows and special-resource burrows will be avoided, where	Licensee (Project Biologist/Contractor) in consultation with USFWS, CDFW and State Water Board.	Construction

Mitigation Program	Responsible Party	Timing for Mitigation
possible. Where avoidance of any burrow is infeasible, occupancy will first be determined through the use of fiberoptics, probes or mirrors. All burrows that could potentially host a tortoise will be excavated with hand tools in the method prescribed by the Desert Tortoise Council (1994, rev. 1999), *Guidelines for handling desert tortoises during construction projects.* Any tortoises found will be removed from the construction area per MM TE-4: Revised Desert Tortoise Clearance and Relocation/ Translocation Plan. Pipeline trenches will be closed, temporarily fenced, or covered each day. Each day, any open trenches will be inspected by an approved biological monitor at first light, midday, and at the end of each day to ensure tortoise safety. If necessary, temporary fencing will be installed in the active work area to separate a tortoise from active construction, in order to maximize protection. If a tortoise is injured or killed, surface- disturbing activities must cease in the area of the killed or injured tortoise and the Project Biologist contacted. Injured tortoises will immediately be taken to a qualified veterinarian regardless, if their survival is expected. USFWS will determine if the tortoise can be returned to the wild, should it recover. As a mitigation performance standard, following site clearance, a report will be prepared by the Project Biologist to document the clearance surveys, construction monitoring, the capture and release locations of all tortoises found, individual tortoise data, and other relevant data. This report will be submitted to the CDFW and USFWS.		
MM TE-3. Desert Tortoise Exclusion Fencing. The substation will be enclosed with a permanent tortoise exclusion fence to keep adjacent tortoises from entering the site. The fencing type will be 1-by 2-inch vertical mesh galvanized fence material, extending at least 2 feet above the ground and buried at least 1 foot. Where burial is impossible, the mesh will be bent at a right angle toward the outside of the fence and covered with dirt, rocks, or gravel to prevent the tortoise from digging under the fence. Tortoise-proof gates will be established	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	Temporary tortoise exclusion fences that allows passage of sheep of all life stages shall be installed around work zones prior to beginning construction and should be removed only after construction and subsequent mitigation measures are complete. If additional fencing is needed during construction to protect tortoises, this

Mitigation Program	Responsible Party	Timing for Mitigation
at all site entry points. All fence construction will be monitored by qualified biologists to ensure that no tortoises are harmed. Following installation, the fencing will be inspected monthly and during all major rainfall events. Any damage to the fencing will be repaired immediately. Parking and storage will occur within the substation and disturbed, previously fenced areas. Any areas on the Central Project Area that are determined through surveys to require fencing will be fenced as outlined above (Figure 3.6-4 of the Final EIR). Where a fence is discontinuous (between tailings piles for example), the fence ends will extend well up the slope of the piles, to ensure that tortoises cannot go around the end. Alternative methods may be explored to ensure that the fences are functional at excluding tortoises.		fencing should be installed and maintained during the construction period. All permanent fences shall be maintained in a fully functional condition for the life of the Project.
MM TE-4. Revised Desert Tortoise Clearance and Relocation/Translocation Plan. The Revised Desert Tortoise Clearance and Relocation/ Translocation Plan is found in its entirety within Section 12.14 of the Final EIR. For both the Central Project Area and the linear facilities, it is anticipated that any tortoises removed would not be "translocated" or "relocated" in the biological sense of putting an animal in a location outside its home range. Instead, any tortoise would simply be removed to another part of its home range. Because construction on the Central Project Area will occur on highly disturbed previously mined areas, any tortoise found there during clearance would likely be a transient or in a peripheral part of its home range, certainly outside its core use areas or parts of its home range that could support its survival. By moving such a tortoise to a location immediately adjacent to its capture site outside the fenced construction area, the Project would be maintaining the tortoise within its home range, not translocating it. The tortoise merely would be excluded from undesirable areas. For utility corridors and fence construction, tortoises would be removed a short distance from the construction zone. Tasks will include the following: • Tortoise handling and temperature requirements. • Data gathered on removed tortoises.	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	Plan will be revised if needed during final design, then implemented during construction for the life of the Project.

Mitigation Program	Responsible Party	Timing for Mitigation
• Translocation site preparation (if any) and choice. • Monitoring – all tortoises removed will be monitored sufficiently to ensure safety.		
MM TE-5. Predator Monitoring and Control Program. The Predator Monitoring and Control Program is found in its entirety within Section 12.14 of the Final EIR. Proposed projects on federal lands that may result in increased desert tortoise predator populations must incorporate mitigation to reduce or eliminate the opportunity for raven proliferation. One of the most significant desert tortoise predators are ravens. The USFWS has developed a program to monitor and manage raven populations in the California desert in an effort to enhance desert tortoise recovery. In order to integrate monitoring and management, the USFWS has agreed to an "in-lieu" fee to replace quantitative raven monitoring on new projects in the range of the desert tortoise. The Licensee will pay in-lieu fees to USFWS that will be directed toward a future quantitative regional monitoring program aimed at understanding the relationship between ongoing development in the desert region, raven population growth and expansion and raven impacts on desert tortoise populations. The vehicle for this program is a Memorandum of Understanding between the Licensee, CDFW, and USFWS. The Predator Monitoring and Control Program may include this in-lieu fee if it is determined that the raven population may increase over current levels due to the Project. In addition to this in-lieu fee, the program will include, at a minimum: • A suite of construction and operations measures to reduce food scavenging and drinking by ravens (e.g., trash containment, minimization of pooling water on roadways and construction right-of-ways.) • Roadkill removal. • Qualitative monitoring of raven use of the Project site during operations, conducted on a pre-determined schedule by the on-site Project environmental compliance officer.	Licensee (Project Biologist) in consultation with USFWS, CDFW and State Water Board.	Plan to be revised as needed during final design and implemented during construction and operation.

Mitigation Program	Responsible Party	Timing for Mitigation
• Breeding season nest surveys. • Baseline and post-construction surveys for other desert tortoise predators, including coyotes, wild dogs, and gulls. • Mitigation measures to be implemented if the number of predators increases. • A schedule for post-construction surveys during the second year of Project operation, followed by surveys once every 5 years. • The Licensee will continue to work collaboratively with the resource management agencies to conduct adaptive management as needed to control ravens and other predators in the Project area.		
MM TE-6. Habitat Compensation. The Northern and Eastern Colorado Desert Coordinated Management (NECO) Plan states that all lands within a DWMA will be designated as Category I Desert Tortoise Habitat[1], with required compensation of 5 acres for every acre disturbed. All lands outside a DWMA are considered Category III habitat, with a 1:1 compensation ratio. The Project overlaps 19 acres of Category I Habitat and 65 acres of Category III Habitat. A minimum total compensation, then, would be 160 acres (Figure 3.6-3 of the Final EIR). This land would need to be purchased in the same population of desert tortoises as occupy the site. In addition, the following features should apply to compensation lands: • Be part of a larger block of lands that are currently protected or able to be protected. • Are not subject to intensive habitat degradation (e.g., recreational use, grazing use, agriculture.)	Licensee in consultation with CDFW and State Water Board.	Construction/Life of the Project

[1] BLM habitat categories (BLM 1988), ranging in decreasing importance from Category I to Category III, were designed as management tools to ensure future protection and management of desert tortoise habitat and its populations. These designations were based on tortoise density, estimated local tortoise population trends, habitat quality, and other land-use conflicts. Category I habitat areas are considered essential to the maintenance of large, viable populations.

Mitigation Program	Responsible Party	Timing for Mitigation
• Have inherently moderate to good habitat that will naturally and ultimately regenerate when current disturbances are removed. • Preferably are bordered by native habitat suitable for tortoises. • In part, may represent a buffer for a block of good habitat.		
MM TE-7. Operations and Maintenance. Tortoises observed during routine maintenance activities will be allowed to voluntarily move out of harm's way. Transmission line repair activities that will result in surface disturbance will require biological monitoring, per MM TE-2.	Licensee (Project Biologist/Contractor) in consultation with CDFW and State Water Board.	Project Operation.
Aesthetic Resources		
MM AES-1. Lighting. To minimize lighting effects and potential light pollution outside of the proposed Project boundaries, the final engineering design shall incorporate directional lighting, light hoods, low pressure sodium bulbs or light emitting diode (LED) lighting, and operational devices to allow surface night-lighting in the central site to be turned on as-needed for safety to minimize lights that would be directly visible from the National Park. Lighting systems will be designed to use the warmest light practicable for the application. The Licensee shall fund night sky monitoring to be conducted in collaboration with the National Park Service (NPS) during the post-licensing design period (to represent baseline conditions) and during construction and the initial operational period. In addition, the NPS will be consulted during the Project design phase to ensure that feasible measures to minimize light trespass are incorporated into final design.	Licensee (Contractor/ Environmental Coordinator) in consultation with State Water Board.	Final Engineering/Pre-construction/ Construction/Operation
MM AES-2. Water Pipeline. For construction of the water pipeline, reduce side cast disposal of soils from open cut construction (by replacing disturbed soil within the trench and limiting the width of the construction disturbance) to reduce color contrast and disturbance with surrounding landscape. The area disturbed during pipeline construction shall be backfilled and revegetated with native	Licensee (Contractor/ Environmental Coordinator) in consultation with State Water Board.	Final Engineering/Pre-construction/ Construction

Mitigation Program	Responsible Party	Timing for Mitigation
vegetation immediately following completion of pipeline construction.		
MM AES-3. Road Crossings. For design of the transmission line, road crossings shall be aligned perpendicular to the road to minimize views up and down ROW corridors, and towers should be placed at the maximum distance from the road ROW. Steel lattice structures with a dull, galvanized steel finish shall be utilized to reduce visual contrast. Conductors shall be selected to reduce glare and visual contrast. The corridor should be collocated with the existing MWD transmission corridor, and tower spacing at Victory Pass designed so that as few towers as possible are skylighted on the ridgeline. These considerations will be balanced with engineering constraints and concerns for minimizing impacts to other resources such a desert tortoise and cultural resources. Final design will be approved by the FERC.	Licensee (Contractor/ Environmental Coordinator) in consultation with State Water Board.	Aesthetic measures will be incorporated into the Project design and implemented during construction.
MM AES-4. Transmission Line. For construction of the transmission line, existing access roads and construction laydown areas shall be used to the extent feasible. The transmission line disturbed zones that will not be required for long-term maintenance access will be revegetated with native vegetation immediately following completion of transmission line construction, consistent with the recommendations in the Biological Resources Revegetation Plan (*see* Section 12.14 of the Final EIR).	Licensee (Contractor/ Environmental Coordinator) in consultation with State Water Board.	Construction
PDF AES-1. Staging Areas. Staging areas and areas needed for equipment operation, material storage and assembly shall be combined with construction lands to the extent feasible, and organized to minimize the total footprint needed. Staging, storage, and temporary construction areas shall be reclaimed as soon as the use of each such area is completed.	Licensee (Contractor/ Environmental Coordinator) in consultation with State Water Board.	Construction
Cultural Resources		
MM CR-1. Protect Known Historic Properties. Of the cultural resources recorded within the Project boundaries (*see* Table 3.8.4 of the Final EIR), only the CRA (P-33-6726) is evaluated as potentially eligible for listing under Criterion "A" – broad patterns of history; and Criterion "C" – embodies distinctive characteristics of a type, period,	Licensee (Environmental Coordinator/ Contractor) in consultation with SHPO and State Water Board.	Engineering Design/ Construction/ Operation

Mitigation Program	Responsible Party	Timing for Mitigation
region, or method of construction. No formal determination of eligibility has been made, but the CRA will be treated as potentially eligible. **Management Activity:** Design transmission line and water pipes to avoid direct or indirect impacts to the buried portion of the CRA. Inspect once every 2 years to observe if conditions are stable or if any disturbance or deterioration has occurred. The Licensee will design transmission tower locations, plan conductor installation procedures, and design water line placements to avoid impacts to this crucial element of southern California's water delivery infrastructure. Consultation with the MWD will occur for that purpose. The CRA is buried in the areas of the Project Area of Potential Effect (APE) and no impacts to its integrity are anticipated. • The inspections will be made at ground surface level as appropriate. • Digital photographs will be taken and compared with photographs from the previous inspections. • The Licensee (Project Environmental Coordinator or designee) will summarize observations made during inspections every 2 years during construction. This summary will be included in the Historic Properties Management Plan (HPMP) Implementation Summary Report (HPMP Implementation Report). The Licensee will provide a HPMP Implementation Report on a 6-year review cycle after construction, in coordination with the State Historic Preservation Office (SHPO). • Although none are presently identified, in the event that interested Indian Tribes identify traditional cultural properties (TCPs) in the future during the planning, construction, and/or operation of the Project within the APE, the Project Environmental Coordinator shall direct qualified individuals to conduct additional consultation with the Indian Tribes, BLM, and SHPO to evaluate and document the properties in accordance with National Register Bulletin 38 (Parker and		

Mitigation Program	Responsible Party	Timing for Mitigation
King, 1998). If the properties are determined to be eligible for listing in the National Register of Historical Places (NRHP), appropriate measures will be developed to mitigate adverse effects through consultation with the Indian Tribes, BLM, and SHPO. Priority will be given to preservation in place when possible , followed by data recovery, documentation, restoration or other measures as approved by the Tribes, BLM and SHPO. **Implementation Steps for Performance:** • Inspect the CRA in the area of the APE every 2 years during construction. • Provide a summary of observations on a 2-year cycle during the construction phase and a 6-year reporting cycle thereafter. • If notable changes are observed in site conditions consult with SHPO to determine if further remedial actions are appropriate. • Conduct appropriate consultation and treatment if TCP are identified in the future.		
MM CR-2. Inventory and Evaluate Cultural Resources Within the Kaiser Mine Property. An inventory of this portion of the APE will be undertaken in compliance with Section 106 of the National Historic Preservation Act and according to regulatory procedures provide in 36 CFR 800. The inventory will also include other accessible portions of the APE within the Kaiser property. The entire townsite and associated portions of the railroad will be re-recorded, and the various elements will be considered as contributors to a National Register district. **Management Activity:** A Work Plan will be developed and executed following issuance of the FERC license and upon gaining legal access to the subject lands. A phased approach will be taken in order to make prudent and well-informed decisions on Section 106 compliance within the Kaiser property. The first phase will be a scoping reconnaissance of the APE within the Kaiser property and	Licensee (Environmental Coordinator) in consultation with BLM, FERC, SHPO and State Water Board.	Pre-construction

Mitigation Program	Responsible Party	Timing for Mitigation
the entirety of the Eagle Mountain townsite. Portions of the site have been re-used from 1988 until 2003 for a prison. A high school and residential community has occupied portions of the site until recent years. Today it exists as a mix of abandoned and re-occupied post-war minimal traditional style dwellings, Kaiser operations buildings, modern buildings, ruins, and foundations. Questions concerning what remains of the original townsite plan and integrity of the Eagle Mountain townsite will be assessed to determine whether a district is feasible or warranted and what the scope of a survey should include. This information will be applied to the development of a Work Plan for the recording and evaluation of the site. • The Work Plan will include a draft historic context and historical information about the footprint and content of the original townsite and its development over time. The context will include a consideration of the Eagle Mountain as a late example of a company town in the American West. This information will be used to develop an approach to the documentation of the site and consideration of whether a potential district may exist. The draft Work Plan will be submitted to SHPO, BLM, and FERC for review, comment, and approval of the survey approach. • Updates to Department of Parks and Recreation (DPR) 523 forms will be developed for the townsite, mine, and railroad and will be used as the basis for formal evaluations of the townsite, mine, and railroad for listing in the NRHP will be made according to 36 CFR 800 and 36 CFR 60.4. Individual buildings or structures will be documented on DPRb forms. A District Record (DPR 523d) will be completed, if appropriate. Any other resources discovered during survey also will be documented and evaluated. The results will be provided in California Archaeological Resource Management Report format and to the Secretary of the Interior's standards for archaeological reporting.		

Mitigation Program	Responsible Party	Timing for Mitigation
Implementation Steps for Performance: • SHPO, BLM, and FERC concurrence will be obtained for the determination of NRHP-eligibility of the Eagle Mountain townsite, mine, railroad, and any other documented cultural resources within the Project APE, including consideration for the potential of any resources as contributing elements to a historic district, if evidence exists for one to be present. • If any resources are determined to be historic properties, recommendations will be developed to avoid or mitigate impacts through appropriate treatments in accordance with the Secretary of the Interior's standards. These include in order of preference: project design to avoid direct impacts; moving of standing buildings or structures in the APE to other areas of the townsite or mine so that integrity of setting, feeling, and materials can be retained; or data recovery and documentation.		
MM CR-3. Implement the Historic Properties Management Plan and a Worker Environmental Awareness Program. Pursuant to CEQA Guidelines §15126.4(b)(3)(A-D) preservation in place is the preferred manner in which to mitigate impacts to archeological sites. Preservation in place maintains the relationship between the artifacts and context, and seeks to avoid conflict values of groups associated with the site. The Historic Properties Management Plan and a Worker Environmental Awareness Program have been prepared to address procedures and treatment for data recovery and will be adopted prior to site excavation. **Management Activity:** Implement project-specific education program. • A qualified archaeologist will implement a cultural resources element for the Worker Environmental Awareness Program that is tailored to the Eagle Mountain Pumped Storage Project and workforce. This Program will focus on possible discovery and mitigation procedures during the construction phase of the Project as well as preservation obligations of	Licensee (Environmental Coordinator/ Contractor) in consultation with SHPO and State Water Board.	Pre-construction/Construction/ Operation

Mitigation Program	Responsible Party	Timing for Mitigation
Project staff. • The program will include a printed handout for all Project personnel and a PowerPoint presentation or video that all Project personnel will be required to view. • The program will present concepts of cultural resources management in a simple, understandable format, including a review of preservation laws and sanctions, examples of possible discoveries, and notification procedures in the event of discoveries. These are key elements of the HPMP including the Unanticipated Discoveries Plan and the steps to follow in evaluating potential cultural resources needs that are triggered by proposed construction activities. • The program will include a Monitoring Protocol and Provisions for Enforcement that may be presented to refresh personnel and introduce new staff to cultural resource concepts and Project-specific issues. • Project equipment and vehicle operators will be educated on the importance of staying within Project boundaries and also the prohibitions of going off designated routes of travel such as Eagle Mountain Road or Kaiser Road.		
MM CR-4. Offer Opportunities for Public Interpretation. Unlike other hydroelectric projects where public access and recreational opportunities may be afforded, safety concerns and proximity to a proposed landfill project preclude offering public access within the core of Project boundaries. Opportunities for public interpretation are therefore extremely limited. Some appropriate signage that interprets the history of the area already exists, including the 2009 E Clampus Vitus monument on Eagle Mountain Road for the 36th Evacuation Hospital associated with the World War II DTC and a Riverside County historical marker that acknowledges the Iron Chief, Eagle Mountain, and other mines of the area. The DTC/CAMA is also thoroughly and professionally interpreted at the General Patton Memorial Museum in Chiriaco Summit, located off of I-10 between Indio and Desert Center. The prehistory and Native American	Licensee (Environmental Coordinator/ Contractor) in consultation with SHPO and State Water Board.	Pre-construction/Construction/ Operation

Mitigation Program	Responsible Party	Timing for Mitigation
cultural traditions of the region are interpreted at the Agua Caliente Cultural Museum in Palm Springs, the Malki Museum on the Morongo Indian Reservation, the Palm Spring Desert Museum, the Coachella Valley Museum and Cultural Center, and at Joshua Tree National Park. **Management Activity:** Develop informative signage that will be available to the public. The Licensee will develop and install one weather-tolerant sign that will be placed outside the main gate of the facility. The sign will provide information about the prehistory and history of the general area, Native American groups who inhabited the area, and background on the functioning of the Project. Local museums and historical monuments will also be identified. A public interpretive sign will be developed in coordination with the development of the HPMP and will be installed within 1 year of completion of the boundary fence.		
MM CR-5. Review Effectiveness of the Historic Properties Management Plan. **Management Activity:** Every 6 years, the Licensee will determine if modifications will improve the effectiveness of the HPMP. Develop recommendations for changes to the HPMP that may be discussed with SHPO, the BLM, Riverside County, interested Indian Tribes, FERC, and other consulting parties.	Licensee (Environmental Coordinator/ Contractor) in consultation with SHPO, and State Water Board, BLM, Riverside County, interested Indian Tribes, FERC, and other consulting parties.	Pre-construction/Construction/Operation
MM CR-6. Consult with SHPO, the BLM, Riverside County, interested Indian Tribes, and FERC. **Management Activity:** Develop a HPMP Implementation Report. The HPMP Implementation Report will be distributed for review according to a 2-year cycle during the construction phase of the Project because cultural resource discoveries and treatments are most likely during that period. Thereafter, in the operation and maintenance phase, the HPMP Implementation Reports will be coordinated with the 6-year cycle of the Licensed Hydropower Recreation Development Report (FERC Form 80). The report will	Environmental Coordinator/ Contractor in consultation with BLM, FERC, Riverside County, interested Indian tribes, SHPO and State Water Board.	Pre-construction/Construction/Operation

Mitigation Program	Responsible Party	Timing for Mitigation
summarize, in table format, all Licensee cultural resources consultations and/or surveys performed for Project modifications, activities related to the Erosion Control Plan, or any other activities that have been reviewed due to their potential to result in soil disturbance in areas not previously disturbed. The HPMP Implementation Report will: • Describe the proposed modifications, the type of cultural survey or other activity performed, the results of the survey or other activity, and actions taken (e.g., SHPO consultation and/or other consultation, mitigation, no action determined appropriate, etc.) • Summarize observations made of historic properties. • Include summaries of cultural resource treatments as an update to a HPMP implementation summary table. • Report the status of Licensee's public interpretation projects. • Recommend modifications to the Project HPMP that will improve its implementation if appropriate. **Implementation Steps for Performance:** Develop a format for the HPMP Implementation Report and its associated Summary Table that will present the cultural resources activities and considerations in which the Licensee participated over a 2-year reporting cycle during construction and the 6-year reporting cycle thereafter. The HPMP Implementation Report will be provided to SHPO, BLM, Riverside County, and interested Indian Tribes for a 30-day review and comment period every 6 years in coordination with FERC Form 80. Following a consideration of review comments, the Licensee will file the HPMP Implementation Report with the FERC.		
MM CR-7. Class I Investigation. In the event that Project activities would extend beyond the areas previously surveyed, then background literature will be reviewed to identify the location, character, and significance of known cultural resources in the area of a proposed action and the potential of the proposed action to affect historic properties. The Class I Investigation will rely on information contained within the Licensee's Project archives. Should	Licensee (Environmental Coordinator/Contractor) in consultation with BLM, FERC, Riverside County, interested Indian tribes, SHPO and State Water	Pre-construction/Construction/Operation

Mitigation Program	Responsible Party	Timing for Mitigation
these data not prove sufficient, the Project Environmental Coordinator may determine that additional documentation is necessary to address a particular action under consideration that extends beyond the 1-mile buffer of the already completed Class I Investigation. The most important source of Class I Literature Review is the Eastern Information Center California (EIC) at the University of California, Riverside. **Management Activity:** compare proposed Project location with Cultural Resources Management Maps. • Determine if the Project area is located within 100 feet of a potentially significant previously recorded archeological site. • Determine if Project area has been characterized as actively eroding or previously disturbed by other ground-disturbing activity (e.g., by machine excavation or underground utility line.) • Determine if the area has been previously surveyed for cultural resources. **Implementation Steps for Performance:** based on the results of the above-noted Management Activity. • Project area is located within 100 feet of a previously recorded potentially significant archeological site. Delay Project pending SHPO consultation and possible follow-up studies by a Secretary of the Interior-qualified professional archaeologist. • Previous ground-disturbing activity may be documented or observed therefore no Project effect on cultural resources expected. Project may proceed. The Licensee shall include the Project description and permit considerations in the HPMP Implementation Report that will be distributed to the SHPO, the BLM, Riverside County, interested Indian Tribes and FERC on a 2-year cycle during the construction phase and on a 6-year review cycle thereafter in coordination with Form 80.	Board.	
MM CR-8. Class III Cultural Resources Field Investigation. Any modifications or additions to the APE in previously unsurveyed and	Licensee (Environmental Coordinator/ Contractor) in	Pre-construction/Construction/Operation

Mitigation Program	Responsible Party	Timing for Mitigation
undisturbed areas will require a Class III survey in compliance with Section 106 of the National Historic Preservation Act and according to 36 CFR 800. The Licensee will conduct an on-the-ground inventory of the APE for a proposed action that confirms the presence of known cultural resources and that may result in identification of previously unrecorded cultural resources. A Class III investigation may involve the excavation of shovel tests placed at 50-foot intervals within the APE or implementation of an alternative investigative strategy approved by the Licensee's Project Environmental Coordinator and the SHPO. Any investigations on easements through BLM land require a Fieldwork Authorization to a BLM permit-holding archaeologist in compliance with the Federal Land Policy and Management Act of 1976, as amended (PL 94-579). **Management Activity:** Consult with BLM or other land holding agencies as to what Section 106 or Section 110 compliance needs may still be required and implement as specified. Engage services of a qualified archaeologist to brief the Project Environmental Coordinator on correct scoping and protocols and conduct Class III Survey such as a walkover survey and/or systematic subsurface shovel testing (e.g., perform an identification level archeological field survey.) The actual scope of work will depend upon the proposed Project location and size of the proposed activity as well as BLM requirements on BLM land. The archaeologist will perform the Class III Survey and prepare a report that describes the investigation and results. The Licensee will forward this report to the SHPO, interested Indian Tribes and FERC. All new reports and site forms will be submitted to the EIC, University of California, Riverside. **Implementation Steps for Performance:** Review results of the Class III Survey and the associated recommendations. • If the Class III Survey did not locate cultural resources, then the proposed action may proceed following consultation with BLM and SHPO. • If the Class III Survey locates cultural resources that the archaeologist recommends as not potentially significant, then the Licensee Project Environmental Coordinator	consultation with BLM, SHPO and State Water Board.	

Mitigation Program	Responsible Party	Timing for Mitigation
consults with SHPO. If consensus is reached on the recommendation, then the action may proceed. If SHPO does not concur, then the resource is treated as potentially significant. • If the Class III Survey locates cultural resources that the archaeologist recommends as potentially significant (i.e., demonstrates good integrity, identifiable limits, structure, function, research potential, and cultural/historical context – see definition in Section 4.2.3 of the Final EIR), then the Licensee's Project Environmental Coordinator consults with SHPO. If SHPO concurs with evaluation, then a Testing Phase investigation is recommended unless action may be designed to avoid the resource. Alternative Project locations will be reviewed.		
MM CR-9. Testing Phase Cultural Resources Field Investigation. Limited archeological excavations and analyses, possibly including documentation of structures, will be conducted to assess the National Register eligibility of individual resources and Project effects on historic properties. The criteria for sites eligible to the NRHP may be found at 36 CFR 60.4. A site is eligible to the NRHP if it contains qualities that are significant in American history, architecture, archaeology, engineering, and culture and possesses integrity of location, design, setting, materials, workmanship, feeling, and association and: • is associated with events that have made a significant contribution to the broad patterns of history; • is associated with the lives of persons significant in the past; • embodies the distinctive characteristics of a type, period or method of construction; or represents a significant and distinguishable entity whose components may lack individual distinction; or • has yielded, or may be likely to yield, information important in prehistory or history.	Licensee (Environmental Coordinator/ Contractor) in consultation with BLM, FERC, SHPO and State Water Board.	Pre-construction/Construction/Operation

Mitigation Program	Responsible Party	Timing for Mitigation
Management Activity: Engage services of a qualified archaeologist to collect data sufficient to determine if a cultural resource qualifies as significant. If the site is located on BLM land, an excavation permit is required for testing programs that remove more than one cubic meter of soil from an individual site, in compliance with the Archaeological Resources Protection Act of 1979, as Amended (PL 96-95). Archaeological Resources Protection Act permits require submittal of a Treatment Plan/Research Design for which the BLM is required to consult with the SHPO and interested Indian Tribes prior to approving field investigation. The archaeologist will perform a Testing Phase investigation and prepare a report that describes the Testing Phase investigation and results. The Licensee will forward this report to the BLM for consultation with SHPO, interested Indian Tribes and FERC. **Implementation Steps for Performance:** Review results of the Testing Phase Report and the associated recommendations, and consult with the BLM and SHPO. • If the Testing Phase investigation indicates that the cultural resource does not qualify as significant, Project may proceed following consultation with SHPO. • If the Testing Phase investigation indicates that the cultural resource qualifies as significant, the Licensee consults with the BLM and SHPO. If the SHPO concurs with the recommendation that the cultural resource is potentially eligible for listing in the NRHP and if the Project is not amended to avoid the resource, consultation with the SHPO will continue. A qualified archaeologist will develop the scope of work that will serve as mitigation of Project effects. The Licensee will consult with the SHPO and gain consensus on the appropriate mitigation (may involve further Data Recovery field investigation, monitoring, or another alternative treatment measure.)		
MM CR-10. Data Recovery or Alternative Mitigation. The Licensee will investigate activities designed to mitigate effects upon a historic property that an action will affect. This may include data recovery, documentation, restoration or other measures. Such	Licensee (Environmental Coordinator/ Contractor) in consultation with BLM, FERC, Advisory Council	Pre-construction/Construction/Operation

Mitigation Program	Responsible Party	Timing for Mitigation
investigations will be preceded by development of an action-specific Memorandum of Agreement that has been approved by the Licensee, SHPO, BLM, Advisory Council on Historic Preservation, FERC, and, as appropriate, interested Indian Tribes. **Management Activity:** The Licensee's Project Environmental Coordinator works with Project proponent and qualified archaeologist and consults with SHPO to avoid Project adverse impacts, minimize Project adverse effects through possible design modifications and or through data recovery or an alternative mutually agreed-upon method. If NRHP-eligible resources may not be avoided, The Licensee's archaeologist will develop a Memorandum of Agreement (MOA) and the Licensee will consult with SHPO, BLM, Advisory Council on Historic Preservation, and interested Indian Tribes, as appropriate, and files the MOA with FERC for approval. When an appropriate MOA is agreed upon, the archaeologist will perform the Data Recovery mitigation and prepare a report that describes the mitigation and the results. The Licensee will forward this report to the consulting parties. **Implementation Steps for Performance:** Review results of the data recovery or other mitigation and consult with the SHPO, BLM, Advisory Council on Historic Preservation, interested Indian Tribes, and the FERC. When consulting parties concur that mitigation has been successfully achieved, the action may proceed.	on Historic Preservation, interested Indian tribes, SHPO and State Water Board.	
MM CR-11. Treatment of Unanticipated Discoveries of Cultural Resources and Human Remains. As with all development projects in the state, should unforeseen artifacts become uncovered during site grading, the Licensee is required to adhere to all state of California procedures, including Section 21083.2(i) of the CEQA Statutes and Section 15064.5 of the CEQA Guidelines regarding stoppage of work, handling of discovered materials, and notification of proper authorities to ensure that the construction/operation of the Project would not have an adverse effect on cultural resources. The Licensee is responsible for addressing action impacts to cultural sites and human remains should they be exposed as a result of ground disturbing activities by the Licensee or one of its contractors; erosion control measures; erosion of any inventoried historic	Licensee (Environmental Coordinator/ Contractor Project Archeologist/ Riverside County Coroner), as required in consultation with BLM, FERC, interested Indian tribes, SHPO and State Water Board.	Construction

Mitigation Program	Responsible Party	Timing for Mitigation
properties; or it resources that are exposed in the event of a Project operation emergency. **Management Activities:** The Licensee shall follow the Project specific Plan and Procedures Addressing Unanticipated Discoveries of Cultural Resources and Human Remains, found in Appendix A of the HPMP in the event that unanticipated cultural materials or human remains are found within the Project area. **Implementation Steps for Performance:** The Licensee shall consult with SHPO, BLM, interested Indian Tribes, Riverside County Coroner, as appropriate and depending on the land jurisdiction on which any discovery is made, and FERC.,. If the Licensee or its contractors discovers contemporary contexts with human remains, local law enforcement agencies and the Riverside County Coroner shall be notified and consulted.		
Land Use/Public Services		
MM LU-1. Development Impact Fee. Prior to the start of commercial operation the Licensee shall pay to Riverside County the required Development Impact Fee for the Project area in accordance with Riverside County Ordinance 659, as amended through 659.7 and Chapter 4.60 of the Riverside County Code (Development Impact Fees).	Licensee/Environmental Coordinator in consultation with Riverside County and State Water Board.	Prior to start of Commercial Operations
MM LU-2. Coordinate with MWD. The Licensee will submit design plans for proposed Project facilities which may affect MWD facilities to the MWD for its review and approval for any Project component that may affect MWD facilities or rights-of-way. MWD's approval will be contingent on review and approval of design plans. MWD will also be notified of the construction of Project features that may affect MWD facilities or rights-of-way and will have an opportunity to observe construction of such features.	Licensee, in consultation with MWD and State Water Board.	Pre-construction/Construction
PDF LU-1. Construction Access. Construction access to/from the substation site will be from the Eagle Mountain Road exit and follow the Frontage Road east to the site. The Contractor will be responsible for monitoring construction access points.	Licensee (Contractor/ Environmental Coordinator) in consultation with Riverside County, CalTrans and	Construction

Mitigation Program	Responsible Party	Timing for Mitigation
	State Water Board.	
PDF LU-2. Construction Monitoring. Two weeks prior to beginning construction, notices shall be posted locally stating hours of operation for construction near the Desert Center community and along State Route 177.	Licensee (Contractor/ Environmental Coordinator in consultation with Riverside County, CalTrans and State Water Board.	Construction
PDF LU-3. Pipeline Construction. Impacts from water pipeline construction will be minimized or avoided by: (1) grading out the sidecast to meet existing grades; (2) minimizing disturbance, and construction timing to avoid seasonal rain, and maintaining surface contours and natural function of washes crossed; and (3) use of existing access roads, when feasible, thereby avoiding new ground disturbance.	Licensee (Contractor/ Environmental Coordinator) in consultation with State Water Board.	Construction
PDF LU-4. Coordination with Adjacent Projects. The Project layout has been modified to eliminate conflicts with existing and proposed land uses. For example, construction staging and lay-down areas have been relocated to a parcel southwest of the Lower Reservoir and outside of the proposed landfill to eliminate conflict with the proposed landfill truck marshalling and railyard facilities. Low voltage cables from the underground powerhouse have been routed through the underground powerhouse access tunnel to avoid conflicts with landfill Phase 3. Water treatment facilities have been relocated further from the CRA to address concerns of the MWD regarding the proximity of the brine ponds to the CRA. These efforts, including coordination to eliminate conflicts with the existing Eagle Mountain Mine operations outside of Project boundaries, will continue during the final design and construction of the proposed Project. Because several large and complex projects are proposed in the same general area (including the landfill project and several proposed solar energy projects), detailed coordination will occur as the Project progresses in order to eliminate conflicts of facility locations, supporting infrastructure, designs, permits, and operations. The Licensee will be required to have regular Project coordination meetings with the owners of the Eagle Mountain Mine, the landfill project, the adjacent solar projects, MWD, and any other	Licensee (Contractor/ Environmental Coordinator) in consultation with MWD and State Water Board, landfill proponents, adjacent land owners, and any other interested land owners and project developers.	Engineering design will be developed in consultation with adjacent projects. Coordination will continue for the life of the Project.

Mitigation Program	Responsible Party	Timing for Mitigation
interested landowners and project developers during construction of the Project. As the Project progresses into the design phase, the Project layout will be designed to preserve landfill capacity in Phases 1 through 4.		
PDF LU-5. Public Outreach Program. The Licensee will hold public meetings in the Project area to brief the public on Project activities and to hear and respond to comments. These meetings will be held quarterly in the Project area during engineering and construction and annually during Project operation for the life of the Project.	Licensee (Environmental Coordinator) in consultation with State Water Board	Starting during the engineering design phase and continuing for the life of the Project.
See **PDF GW-1. Groundwater Seepage.**	--	--
See **MM GW-5. Seepage Recovery Wells.**	--	--
Recreation		
No mitigation is required.	--	--
Population & Housing		
No mitigation is required.	--	--
Transportation		
See **MM AQ-6. Transportation Management Plan.**	--	--
See **PDF LU-1. Construction Access.**	--	--
See **PDF LU-2. Construction Notice.**	--	--
Air Quality		
MM AQ-1. Fugitive Dust. Periodic watering or application of suitable surfactant will be conducted for short-term stabilization of disturbed surface areas and storage piles as needed to minimize visible fugitive dust emissions. For dirt roads, watering, with complete coverage, shall occur at least twice daily, preferably in the late morning and after work is done for the day.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with South Coast Air Quality Management District and	Construction

Mitigation Program	Responsible Party	Timing for Mitigation
	State Water Board.	
MM AQ-2. Trackout. To prevent Project-related trackout onto paved surfaces, the following measures will be undertaken through the construction period: • Prevention and clean-up of Project-related trackout or spills on publicly maintained paved surfaces within 24 hours. • Covering loaded haul vehicles operating on public paved roads. • Material transported off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust. • Paving, gravel covering, or chemically stabilizing on-site roads as soon as feasible. • Limiting on-site vehicle speeds on unpaved surfaces to 25 miles per hour (mph). • Operating a wash rack for drivers to wet down material before leaving the facility. • Operate a wheel washer (or equivalent) to remove soil from vehicle tires as needed.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with South Coast Air Quality Management District and State Water Board.	Construction
MM AQ-3. Grading. Graded site surfaces will be stabilized upon completion of grading when subsequent development is delayed or expected to be delayed more than 30 days, except when such a delay is due to precipitation that dampens the disturbed surface sufficiently to eliminate visible fugitive dust emissions.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with South Coast Air Quality Management District and State Water Board.	Construction
MM AQ-4. Surface Disturbance. Areas of active surface disturbance (such as grading) will be limited to no more than 15 acres per day.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with South Coast Air Quality Management District and	Construction

Mitigation Program	Responsible Party	Timing for Mitigation
	State Water Board.	
MM AQ-5. Earth-moving Activities. Non-essential earth-moving activities will be reduced during windy conditions; i.e., when visible dusting occurs from moist and dry surfaces due to wind erosion. Clearing, grading, earth-moving, or excavation activities will cease if winds exceed 25 mph averaged over 1-hour duration. In addition, compliance with MM AQ-6 through AQ-12 would further reduce impacts from engine exhaust and NOx and other criteria pollutant emissions.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with South Coast Air Quality Management District and State Water Board.	Construction
MM AQ-6. Transportation Management Plan. The Licensee shall be responsible to develop and implement a Transportation Management Plan (TMP) for employees, including provisions for ridesharing, use of shuttle transit for Project employees, and provision of on-site food service to reduce vehicle trips, where feasible. The TMP shall also consider availability of local housing that can be secured for use by a voluntary portion of the employees throughout the construction period. The TMP will target a minimum 25% reduction in employee vehicle trips.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with South Coast Air Quality Management District and State Water Board.	Construction
MM AQ-7. Diesel Trucks. All diesel truck operators shall strictly abide by the applicable state law requirements for idling, as described in the airborne toxic control measure (CCR, Title 13, section 2485), which limits vehicles with gross vehicular weight ratings of more than 10,000 pounds to no more than 5 minutes in a 60-minute period of idling of the primary engine or the diesel-fueled auxiliary power system at any location.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with South Coast Air Quality Management District and State Water Board.	Construction
MM AQ-8. Equipment. Use electrical drops in place of temporary electrical generators, and substitute low- and zero emitting construction equipment and/or alternative fueled or catalyst equipped diesel construction equipment wherever economically feasible.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with South Coast Air Quality Management District and State Water Board.	Construction
MM AQ-9. Generators. Electrical generators must be properly	Licensee (Construction Contractor/ Environmental	Construction

Mitigation Program	Responsible Party	Timing for Mitigation
permitted with the SCAQMD.	Coordinator) in consultation with South Coast Air Quality Management District and State Water Board.	
MM AQ-10. Heavy-duty Diesel Trucks. Heavy-duty diesel trucks shall be properly tuned and maintained to manufacturers' specifications to ensure minimum emissions under normal operations.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with South Coast Air Quality Management District and State Water Board.	Construction
MM AQ-11. Construction Equipment. At least 50 percent diesel fleet hours will utilize 2002 or later year diesel construction equipment.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with South Coast Air Quality Management District and State Water Board.	Construction
MM AQ-12. Off-road Construction Equipment. Older off-road construction equipment shall be retrofitted with appropriate emission control devices prior to on-site use.	Licensee (Construction Contractor/ Environmental Coordinator) in consultation with South Coast Air Quality Management District and State Water Board.	Construction
MM AQ-13. Air Quality Study Design. The Licensee shall work collaboratively with the National Park Service (NPS) to establish an air quality study design for 2 years of ozone monitoring to be conducted upon completion of construction and Project operations beginning. The Licensee will fund the annual expenses as a cost-share with the NPS and other transmission operators. The funding contribution for this study will be based on a percentage of total miles of transmission line.	Licensee (Environmental Coordinator) in consultation with South Coast Air Quality Management District and State Water Board.	Construction/Project Operation

Mitigation Program	Responsible Party	Timing for Mitigation
Noise		
MM N-1. Construction Equipment. The Licensee shall use construction equipment with properly operating and maintained noise mufflers and intake silencers, consistent with manufacturers' standards in order to reduce or avoid construction noise levels.	Licensee (Contractor/Environmental Coordinator) in consultation with Riverside County and State Water Board.	Construction
Greenhouse Gas Emissions		
PDF GHG-1. SF_6 Monitoring. All [sulfur hexafluoride] SF_6-containing circuit breakers that are installed under the Project shall be cataloged and monitored pursuant to California state law and the recommendations of the SF_6 Reduction Partnership for Electric Power Systems.	Licensee (Environmental Coordinator) in consultation with South Coast Air Quality Management District and State Water Board.	Construction and Operation
Hazards & Hazardous Materials		
MM HM-1. UXO Plan. The Licensee, in consultation with the Licensee's Environmental Coordinator, shall implement an unexploded ordinance (UXO) Identification, Training and Reporting Plan (UXO Plan) to properly train all site workers in the recognition, avoidance and reporting of military waste debris and ordnance. Implementation shall include: (1) a description of the training program outline and materials, and the qualifications of the trainers; (2) identification of available trained experts that will respond to notification of discovery of any ordnance (unexploded or not); (3) a work plan to recover and remove discovered ordnance; and (4) work stoppage until site is determined clear by the Environmental Coordinator. **Verification:** The UXO Plan shall be implemented no less than 60 days prior to the initiation of construction activities at the site.	Licensee (Environmental Coordinator/ Contractor) in consultation with State Water Board.	Final Engineering/Pre-construction/ Construction

Mitigation Program	Responsible Party	Timing for Mitigation
Environmental Justice		
No mitigation is required.	--	--