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Secretary for
Environmental Protection



Department of Toxic Substances Control

Barbara A. Lee, Director
5796 Corporate Avenue
Cypress, California 90630



Edmund G. Brown Jr.
Governor

VIA ELECTRONIC TRANSMITTAL

April 24, 2018

Mr. Curt Russell
PG&E Topock Site Manager
PO Box 337
Needles, California 92363

ACCEPTANCE AND CONDITIONAL APPROVAL OF GROUNDWATER REMEDY DESIGN AND CORRECTIVE MEASURES IMPLEMENTATION WORKPLAN AT PACIFIC GAS AND ELECTRIC COMPANY, TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA (EPA ID NO. CAT080011729)

Dear Mr. Russell:

The Department of Toxic Substances Control (DTSC) has completed our review of the Pacific Gas and Electric Company (PG&E) Topock Compressor Station *November 2015 Basis of Design Report/Final (100%) Design Submittal for the Final Groundwater Remedy* (including the *Appendix L, Operation and Maintenance Manual*), the *November 2016 Supplemental and Errata Information*, and the *November 2015 Construction/Remedial Action Work Plan for the Final Groundwater Remedy*. These documents combined are considered the Final Groundwater Remedy Design. DTSC finds that the submitted information contained in the Final Groundwater Remedy Design to be consistent with the requirements of the Corrective Action Consent Agreement executed between PG&E and DTSC in 1996 and the January 2018 Addendum.

Based on the design information provided by PG&E, DTSC completed a Subsequent Environmental Impact Report (SEIR) in accordance with the California Environmental Quality Act. The impact analysis of the SEIR found that the project would have significant and unavoidable adverse impacts (refer to the SEIR for details of the analysis). DTSC considered these impacts against the benefits of the project and made a Statement of Overriding Consideration and adopted the Mitigation Monitoring and Reporting Program as part of the *Statement of Decision and Resolution of Approval of the Project* (enclosed) and certified the SEIR on April 24, 2018. PG&E shall comply with all conditions set forth in the Resolution of Approval when implementing this project.

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DTSC also notes for the record that PG&E submitted a Corrective Measures Implementation/ Remedial Design Work Plan (CMI Work Plan) for the groundwater remedy in May 2011 and a final revision in November 2011. As stated in DTSC's October 27, 2011 letter, DTSC found that many key elements required under the 1996 Corrective Action Consent Agreement for the CMI Work Plan were deferred to the design documentation; therefore, DTSC withheld approval of the CMI Work Plan pending review of the design. In approving the Final Groundwater Remedy Design, DTSC, hereby, also approves the CMI Work Plan for the project.

If you have any questions regarding this letter or the enclosed *Statement of Decision and Resolution of Approval of the Project*, please feel free to contact me at (714) 484-5439.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Aaron Yue', with a stylized flourish at the end.

Aaron Yue
Senior Hazardous Substances Engineer
Office of Geology

Enclosure: *Statement of Decision and Resolution of Approval of the Project*

aky: 0411802A

cc: PG&E Topock Consultative Workgroup Members – Via e-mail

PG&E Topock Geo/Hydro Technical Workgroup Members – Via e-mail

Tribal Representatives in PG&E Contact List – Via e-mail

Statement of Decision and Resolution of Approval of the Project



**CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL
STATEMENT OF DECISION AND RESOLUTION OF APPROVAL
FOR THE
PACIFIC GAS AND ELECTRIC COMPANY
TOPOCK COMPRESSOR STATION
FINAL GROUNDWATER REMEDIATION PROJECT
SCH No. 2008051003**



A RESOLUTION OF THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL (DTSC) APPROVING THE PACIFIC GAS AND ELECTRIC COMPANY (PG&E) TOPOCK COMPRESSOR STATION FINAL GROUNDWATER REMEDIATION PROJECT (FINAL GROUNDWATER REMEDY), INCLUDING THE FINAL REMEDY DESIGN AND THE CONSTRUCTION/REMEDIAL ACTION WORK PLAN (C/RAWP), ADOPTING THE CEQA FINDINGS OF FACT AND STATEMENT OF OVERRIDING CONSIDERATIONS, ADOPTING THE MITIGATION MONITORING AND REPORTING PROGRAM (MMRP), AND ADOPTING THE CONDITIONS OF APPROVAL FOR THE FINAL GROUNDWATER REMEDY PROJECT

WHEREAS, the Subsequent Environmental Impact Report (SEIR) prepared for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station Final Groundwater Remediation Project (Final Groundwater Remedy; Project) identifies and considers the potentially significant and reasonably foreseeable adverse environmental effects of various actions associated with the construction, operation and maintenance, and decommissioning of the Final Groundwater Remedy Project. The primary purpose of the Project is to clean up the groundwater contamination related to the historical release of chemicals in and around the PG&E Topock Compressor Station (Station), in San Bernardino County, California. The Project involves in situ treatment of contaminated groundwater with freshwater flushing. In situ treatment of groundwater refers to the reduction in mass, toxicity, mobility, volume, and concentration of the chromium plume using treatment technologies that treat groundwater in place, as opposed to pumping and circulating water through a separate aboveground treatment plant. In situ treatment would be performed by placing a degradable food-grade organic compound (termed a carbon substrate or carbon amendment) in the groundwater to create reducing conditions to convert hexavalent chromium [Cr(VI)] dissolved in groundwater to relatively insoluble trivalent chromium [Cr(III)]. The reduced chromium would precipitate or become adsorbed onto soils below the water table and thereby be removed from groundwater. The organic carbon substrate would be released into the aquifer by injection after mixing on-site with a water source, such as extracted contaminated groundwater or clean water. The Final Subsequent Environmental Impact Report (Final SEIR) consists of two volumes: Volume 1 – Comment letters on the Draft SEIR, responses to comments, and associated revisions to the Draft SEIR; and Volume 2 – Revised Draft SEIR in its entirety. It also includes an Errata and Revisions to the Final SEIR.

WHEREAS, groundwater beneath and near the Station has been contaminated through the discharge and release of Cr(VI), and total chromium [Cr(T)] in the areas known as Bat Cave Wash and East Ravine. Other chemicals of potential concern (COPCs) that might be associated with historical releases from the Station are molybdenum, selenium, and nitrate. In 2004, DTSC determined that immediate actions were necessary within the Project Area as precautionary measures to ensure that Cr(VI)-contaminated groundwater did not reach the Colorado River. Interim Measures (IMs) were therefore instituted to protect the Colorado River. IMs are cleanup actions that are taken to protect public health and the environment while long-term solutions are being developed and evaluated. There have been three separate but related IMs at the Station since 2004 in response to the need to control the groundwater plume. IM-1, IM-2, and mostly IM-3 are collectively referred to as “the Interim Measure,” or “the IM.”

WHEREAS, investigation and remediation at the Station and the surrounding area is being conducted under the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). RCRA corrective action activities at the Project Site were initiated in 1987 with the completion of a RCRA facility assessment conducted by the U.S. Environmental Protection Agency (USEPA).

WHEREAS, RCRA provides a framework for USEPA to remediate hazardous waste sites throughout the United States. In California, DTSC implements RCRA under such delegated authority from the USEPA through state law.

WHEREAS, DTSC has an ongoing Corrective Action Consent Agreement with PG&E, which also describes DTSC’s authority over the Project. Investigative activities at and in the vicinity of the Station date back to the late 1980s with the identification of Solid Waste Management Units (SWMUs) through a RCRA Facility Assessment (RFA). Closure activities of former hazardous waste management facilities at the Station were performed from 1988 to 1993. The RCRA Facility Investigation (RFI) began in 1996 when DTSC and PG&E executed the Corrective Action Consent Agreement to more fully investigate the nature and extent of contamination at the Station and in the surrounding area. In July 2005, PG&E entered into an Administrative Consent Agreement with the federal agencies including the U.S. Department of the Interior (DOI), U.S. Bureau of Land Management (BLM), U.S. Fish & Wildlife Service (USFWS), and the U.S. Bureau of Reclamation (BOR), under CERCLA [DOI 2005]). Later, in 2013, the U.S. District Court for the Central District of California entered the *Remedial Action Remedial Design Consent Decree between the United States of America and Pacific Gas & Electric Company* (DOI Consent Decree) under CERCLA with the DOI as the federal lead agency (DOI 2013). The 2013 DOI Consent Decree governs only the remedial action addressing contaminated groundwater; the terms of the 2005 Administrative Consent

Agreement remain in effect for response actions associated with releases of hazardous substances at or from the Station other than the remedial action addressing contaminated groundwater.

WHEREAS, in 2011, DTSC evaluated the potentially significant adverse environmental effects of various potentially feasible remedies associated with cleanup of groundwater contamination at the Station. As a result, DTSC certified the Topock Compressor Station Groundwater Remediation Project Final EIR (Groundwater FEIR), adopted the CEQA Findings of Fact and Statement of Overriding Considerations, and adopted the Mitigation Monitoring and Reporting Program (MMRP) (DTSC 2011). Based on these documents, as well as all other information obtained through the administrative process, DTSC approved a groundwater remedy design that consists of in situ treatment with freshwater flushing (referred to as “Alternative E” in the Groundwater FEIR) (DTSC 2011). In 2013, DTSC adopted an Addendum to the Groundwater FEIR, which expanded the Project Area and considered the potential environmental effects associated with the investigation of potential well locations for a freshwater source located in Arizona (DTSC 2013).

WHEREAS, following certification of the Groundwater FEIR, PG&E initiated an iterative remedy design process by preparing the preliminary (30%), interim (60%), pre-final (90%), supplemental pre-final 90%, and final (100%) designs for the Final Groundwater Remedy, to implement the method which was selected and approved in 2011, in accordance with the Corrective Action Consent Agreement process. DTSC provided Interested Tribes with a public review and comment period at each design phase. Over a 4-year period, PG&E worked with DTSC, as well as the DOI, Interested Tribes, landowners, and other stakeholders to address comments and questions, collect new data, and develop the *Basis of Design Report/Final (100%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California, November* (Final Remedy Design; CH2M Hill 2015a). After DTSC and DOI issued final design directives (i.e., directives for proceeding with the final design) to PG&E, on November 18, 2015, PG&E submitted the Final 100% BOD, referred to as the Final Remedy Design (which includes the Operation & Maintenance Manual), and the *Construction/Remedial Action Work Plan for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California* (C/RAWP; CH2M Hill 2015b) to DTSC and DOI for consideration. Supplemental and Errata Information for the Final Groundwater Remedy was provided to DTSC in November 2016, which corrected minor inconsistencies and clarifications to the Final Design.

WHEREAS, PG&E prepared and completed the Final Remedy Design pursuant to the requirements of the Corrective Action Consent Agreement entered into by PG&E and DTSC in 1996 and the Remedial Design/Remedial Action Consent Decree, executed by PG&E and the United States, on behalf of the DOI,

which was approved by the U.S. District Court for the Central District of California in November 2013. PG&E designed the proposed groundwater remedy to comply with the Groundwater FEIR mitigation measures and applicable regulations, and throughout the design period PG&E submitted quarterly mitigation measure compliance reports documenting actions taken to comply with these mitigation measures. The project description considered in the Final SEIR for the Project is based primarily on the Final Remedy Design and the C/RAWP, which reflect modifications and clarifications by PG&E as a result of the collaborative and iterative design process. Tribal comments and input were received and considered throughout the design development process.

WHEREAS, in addition to certain contingencies that are specifically set forth in the Final Remedy Design and C/RAWP, the Project evaluated as part of the Final SEIR also includes a general contingency or allowance for future activities that may be carried out as part of the Project (the “Future Activity Allowance”). The Future Activity Allowance is included in the Project Description and the Final SEIR to ensure that a comprehensive environmental analysis is included should additional activities be warranted over the decades long project implementation.

WHEREAS, the Project components include an estimated total of up to 96 boreholes would be drilled for monitoring well construction and an estimated total of up to 95 boreholes would be drilled for remediation well construction, for a total of 191 boreholes. In addition to these estimated totals, and as part of the Future Activity Allowance which preserves the DTSC’s ability to make project revisions based on new information not known at the time of the SEIR preparation, the Draft SEIR included an analysis of an additional allowance of 25 percent overage for each of the monitoring and remediation boreholes. The Project also contemplates, as part of the Future Activity Allowance, the potential need for up to 10 additional monitoring well boreholes to be installed in Arizona as part of the monitoring program to assess groundwater conditions to protect existing and future groundwater users by measuring water levels and chemical constituents changes as a result of the groundwater remediation project.

WHEREAS, in addition to the remediation and monitoring well network, the proposed Project also includes maximum quantities of supporting infrastructure such as roads, pipelines, utility connections, freshwater supply and conveyance infrastructure, storage areas, buildings, and other necessary support structures to ensure long-term effectiveness. These infrastructure components were considered at a general level with anticipated maximum build estimates in the 2011 Groundwater FEIR (exact locations were not known with precision) and are now known with a higher level of detail (both quantities and locations), as described in the Final Remedy Design and Final SEIR.

WHEREAS, Section IX(2) of the Corrective Action Consent Agreement signed by PG&E and DTSC in 1996 provides that PG&E “shall use its best efforts to obtain access agreements necessary to complete work required by this Consent Agreement from the present owners of such property [beyond the Facility property boundary] within thirty (30) days of approval of any workplan for which access is required.” DTSC agrees with PG&E to modify that timeframe as a result of the phased construction approach for the groundwater remedy. DTSC finds it reasonable to defer the requirement to obtain access agreements to “at least sixty (60) days prior to the project initiation meetings for Phase 1 and Phase 2 of construction, for access to properties encompassed within the scope of the respective phase of construction, as these terms are described in the Construction/Remedial Action Work Plan (CRAWP).” See CRAWP Section 4.2.1 at 4-5 (project initiation meeting), Section 3.3.1.3 at 3-55 (Phase 1 and Phase 2). In the event that an agreement for access is not obtained at least sixty (60) days prior to the project initiation meetings for Phase 1 and Phase 2 of construction, respectively, or within thirty (30) days of the date that the need for access becomes known to PG&E, PG&E shall notify DTSC in writing within fourteen (14) days thereafter regarding both the efforts undertaken to obtain access and its failure to obtain such agreements. Aside from this change, all other provisions of Section IX(2) remain in effect without modification. WHEREAS, the BLM as the federal lead agency has prepared a draft *Cultural and Historic Properties Treatment Plan for Groundwater Remediation, Topock Compressor Station Remediation Project, San Bernardino County, California and Mohave County, Arizona* (Treatment Plan; Hanes and Price *in progress*, draft circulated March 26, 2018) in compliance with federal requirements and in accordance with Mitigation Measure CUL-1b/c-3 of the Final Groundwater EIR (DTSC 2011) and the *Programmatic Agreement Among the Bureau of Land Management, Arizona State Historic Preservation Officer, California State Historic Preservation Officer and the Advisory Council on Historic Preservation for the Topock Remediation Project in San Bernardino County, California, and Mohave County, Arizona* (PA; BLM 2017). After review by Interested Tribes and the Section 106 consultation process as led by the BLM is complete, the final Treatment Plan will be implemented in accordance with Mitigation Measure CUL-1a-19 of the Final SEIR. The measures identified in the draft Treatment Plan are imposed as conditions of the Project, herein. However, when the final Treatment Plan is approved by the BLM, in consultation with Interested Tribes, new or revised measures identified in that final Treatment Plan would also apply and/or supplement those identified herein, to the Topock Compressor Station Final Groundwater Remediation Project.

WHEREAS, DTSC prepared, in consultation with Environmental Science Associates (ESA), a SEIR for the Project in full compliance with CEQA.

WHEREAS, DTSC has, on this date, first adopted a resolution certifying the Final SEIR for the Topock Compressor Station Final Groundwater Remediation Project as adequate under CEQA.

WHEREAS, DTSC finds the Final SEIR complies with the terms and the spirit of the Settlement Agreements entered into between the Fort Mojave Indian Tribe and DTSC, executed by the parties in January 2006 to settle the matter of *Fort Mojave Indian Tribe v. DTSC* (Sacramento Superior Court Case No. 05CS00437), and in 2013 to settle the matter of *Fort Mojave Indian Tribe v. DTSC* (Sacramento Superior Court Case No. 34-2011-80000802).

NOW, THEREFORE, BE IT RESOLVED and ADOPTED by the Branch Chief and through the authority delegated by the Branch Chief and the Director of DTSC, Barbara A. Lee, and on behalf of DTSC that:

1. DTSC approves the Topock Compressor Station Final Groundwater Remediation Project, including the Final Remedy Design, which includes the *Operation and Maintenance Manual Final (100%) Design Submittal* (O&M Manual), C/RAWP, and the Supplemental and Errata Information for the Final (100%) Groundwater Remedy.
2. The approval of the Project is subject to the following conditions of approval:
 - (i) PG&E shall ensure that the Standard Operating Procedures (SOPs) and Best Management Practices (BMPs) outlined in the Final Remedy Design, the O&M Manual and the C/RAWP are adhered to as a condition of approval for the Project, with oversight and enforcement by DTSC. PG&E shall maintain and keep current all SOPs and Health and Safety Plan for the duration of the project. In addition to having these on site, PG&E shall make these available on the Topock project SharePoint, or equivalent, for agency and stakeholder review.
 - (ii) As commented by the Mojave Desert Air Quality Management District (MDAQMD) on the Draft SEIR, PG&E shall coordinate with MDAQMD and the DOI in compliance with the substantive requirements associated with the construction and operation of the groundwater remedy in accordance with the provisions of the CERCLA permit exemption. The DOI is the overseeing agency for the use of CERCLA permit exemption on this cleanup project.
 - (iii) PG&E shall prepare and implement a Final Habitat Restoration Plan following decommissioning of the Project. The final habitat restoration plan will address restoration of areas that were impacted during construction, operation and maintenance, and decommissioning of the Project, specifying salvage/replanting measures, as well as

success criteria, monitoring, and adaptive management requirements for restored areas. Adaptive management actions to ensure successful establishment of native vegetation and desired density of cover of plants will include weed control, irrigation modification, herbivory protection, and additional plantings. The plan shall be submitted to DTSC, California Department of Fish and Wildlife (CDFW), BLM, BOR, USFWS, and DOI for review and DTSC approval.

- (iv) PG&E shall submit a final decommissioning plan which includes a Bird Impact Avoidance and Minimization Plan within 120 days of certification of remedy completion by the DOI and/or DTSC (hereafter referred to as “the Agencies”). PG&E shall remove all underground utilities and infrastructure to the extent practicable (e.g. removal of infrastructures will create significant damage or undesired adverse impacts to the landscape) at the time of remedy decommissioning, but will work with landowners on decommissioning preferences.
- (v) PG&E and DTSC shall track all activities conducted under the Future Activity Allowance to ensure that development of individual components is within the scope of the SEIR. PG&E shall submit a status report regarding use and implementation of Future Activity Allowance facilities throughout the construction and long-term operation of the Project as part of the quarterly mitigation monitoring compliance reporting. The status report must indicate how much of the Future Activity Allowance (of the maximum 25 percent of all Project infrastructure and 10 additional wells in Arizona) has been used by the particular activity, and how much is remaining.
- (vi) Any activities conducted under the Future Activity Allowance shall, at a minimum, adhere to the “Communication Protocol for Future Activity Allowance” flowchart, included as Exhibit 3 to this Resolution, for all communication to Interested Tribes related to implementation of the Final Groundwater Remedy Project.
- (vii) PG&E shall adhere to all communication protocol with Tribes as specified in Programmatic Agreement (PA), *Cultural and Historical Properties Management Plan* (CHPMP), Cultural Impact Mitigation Program (CIMP), and Mitigation Monitoring and Reporting Programs (MMRP) requirements including any additional protocol to be developed and adopted as part of this project.

- (viii) Per Mitigation Measure CUL-5, and for purposes of further reducing the cumulatively significant impact to the Topock Traditional Cultural Property (TCP), PG&E shall provide a one time payment for use by the following Tribes: Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, and Hualapai Indian Tribe (see specific details in Mitigation Measure CUL-5). PG&E shall provide one-time funding in the total amount of \$1,461,500, to be equally distributed amongst the aforementioned Tribes. Funding shall be made by PG&E within 30 days of notification by DTSC that the funding management organization has been established. PG&E shall provide documentation to DTSC that the required funding contribution has been made. It is anticipated that an additional administrative processing fee may be required as part of this condition of approval, and that this will be dependant on the ultimate funding management mechanism that is selected by DTSC.
- (ix) PG&E shall carry out treatment measures as identified in the draft Treatment Plan (March 26, 2018 version) to reduce significant impacts to historical resources:
- PG&E and its archaeological contractor will add the Tribes' cultural perspectives to site documentation through the use of a site form Continuation Sheet or other means. Section 13 of Form 523A (Primary Form) will reference the Continuation Form if available (BLM request). PG&E will also review and update all site forms not updated in the past ten years and add Tribal perspective continuation sheets. Updates will be conducted in conjunction with annual monitoring or other monitoring events.
 - In consultation with the Tribes, revisions to the Annual Monitoring and Site Condition Assessments strategy will be assessed, such as reviewing access routes to particular sites to reduce possible site disturbance and perhaps the removal of some sites from the monitoring target list based on concerns including worker safety, legal access, and potential harm to sites form monitoring-associated foot traffic.
 - PG&E will protect trail segment CA-SBR-29943 near Maze Locus A and monitoring well MW-15 by implementing specific measures to ensure that the trail is not physically impacted by well monitoring activities. Methods will entail physically preventing sampling hoses from touching the ground surface within 20

feet of either side of the trail (if sawhorses or similar equipment is used, it will be weighed down to ensure proper function such as weighing down the sawhorses or similar equipment with sandbags so they do not tip over). In addition, the BLM suggests erecting a post-and-cable fence on top of the mesa to block unauthorized access to the sensitive area and MW-15 from that direction. PG&E will access the monitoring well by way of an existing defined vehicle path.

- PG&E shall establish an Informational Outreach Trailer at Moabi Regional Park during the construction phase of the Project to explain to visitors the nature of the Project and the cultural sensitivity of the area, as deemed appropriate in coordination with Tribal representatives. PG&E will solicit input on design of a multiple panel, high-quality information kiosk from representatives from federal agencies, Tribes, and other interested parties such as the California Historic Route 66 Association. Information panels will provide relevant information (e.g., Topock Maze and its meaning to Colorado River Indian Tribes) aimed at educating the public and stressing respect for the area's prehistoric and spiritual resources. Signage may include information on local history and natural resources of the Colorado River. Signage and infrastructure will compliment and be compatible with a proposed Route 66 kiosk and other agency requirements. PG&E will be responsible for long-term care and maintenance of the kiosk and replacement of panels as necessary due to extreme climate (i.e., usually every 5 years).
- PG&E will minimize impacts to National Old Trails Highway (NOTH)/Route 66 to the greatest extent practicable through careful placement of liquid conveyance pipeline trenches, drill locations, and limiting access of construction vehicles and equipment along road segments that retain historical integrity. To accomplish this goal, the following measures will be applied to all segments with integrity that may be affected by the Project:
 - A Qualified Cultural Resource Consultant shall inspect each location of proposed Project activity once identifiably marked on the ground prior to commencement of construction to ensure avoidance of road segments and associated features to the greatest extent feasible.

- PG&E shall minimize visual intrusions through methods consistent with Final SEIR Mitigation Measure AES-1, including minimizing impacts to mature plant specimens and use of matte paints in muted, earth-tone colors for aboveground and exterior project elements, that are consistent with the surrounding color palette.
- To prevent damage to the fabric of the roadways, portions of the roads may be closed to construction use, or other protective measures (e.g. of dirt or gravel covering, metal or wood protective plates) may be placed over the existing road surfaces where they are needed for construction work. The road shall remain covered with protective materials until all construction activities are completed, including IM-3 decommissioning.
- A Qualified Cultural Resource Consultant will monitor grading, trenching, installation of extraction or injection wells, pipelines, access roads and other transportation facilities, or other ground disturbing activities during construction. The purpose of the monitoring will be to ensure that construction does not inadvertently damage the integrity of NOTH/Route 66 roadway segments and associated features beyond what is anticipated. The Qualified Cultural Resource Consultant will work as part of the construction crew, will participate in all daily construction meetings, and will advise the project manager and construction site superintendent regarding impact avoidance and other historic resource issues. The Qualified Cultural Resource Consultant will have the authority to halt construction if unanticipated disturbances to significant road segments are observed.
- Upon completion of the groundwater remediation process, the historical setting will be restored to the extent practicable.
- All planned or inadvertent disturbances to erosion control structures or other road-related features of historical significance shall be restored following completion of the work to the extent practicable.

- Establish selected photo points (with GPS coordinates) along those portions of the road segments that will be impacted to aid in restoration following the remedy.
- Temporary barrier fences will be installed around work locations to aid in avoidance of inadvertent disturbance of the road features away from the immediate location of planned construction activity. Metal fence posts and orange mesh all-weather fabric will be used for temporary fencing, unless other appropriate materials are identified as preferable, and will be regularly inspected and maintained. Permanent post and double-cable fencing may be required in sustained traffic areas. The Qualified Cultural Resource Consultant will clearly delineate the sensitive areas to be avoided by construction and supervise fence installation. Project personnel will be notified that Project activity is to not extend beyond the established barriers.
- As specified above, during the construction phase of the Project PG&E shall establish the Informational Outreach Trailer at Moabi Regional Park. This temporary visitor center in a modular building will explain to visitors the nature of the Project and the cultural sensitivity of the area, as deemed appropriate in coordination with Tribal representatives.
- PG&E will minimize impacts to individual segments of NOTH/Route 66 that will be affected by the Project through the application of the following segment-specific measures:
 - Segment A: PG&E will perform a detailed condition assessment and develop a plan that will guide careful restoration of the existing circa-1935 Route 66 Welcome sign near the western terminus of Segment A, including such components as the terra cotta tiles on top of the sign. Restoration of the sign shall be consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Restoration. As lead agency, the BLM will seek plan approval from the Havasu National Wildlife Refuge, the land managing agency. Prior to construction to provide guidance for any needed

restoration, PG&E also will complete a HAER Level II documentation following National Park Service (NPS) Standards of the affected portions of the Segment A roadbed and associated character-defining features, such as the guardrail.

- Segment J: To remedy the adverse effect on the Segment J roadway resulting from trenching to bury the liquid conveyance pipelines and conduits along the north shoulder of Route 66, the disturbed surface area will be compacted and restored after placement of the pipe using materials that blend with the adjoining areas to the extent feasible. In addition, well sites shall be similarly restored when the wells are removed at the conclusion of remediation efforts. To protect remaining undisturbed roadway surfaces, use of this segment by construction vehicles and equipment shall be limited to the extent feasible.

Prior to construction to provide guidance for any needed restoration, PG&E will complete HAER Level II documentation following NPS Standards for the affected portions of the Segment J roadbed noted above and the following associated character defining features. Two small historic-era refuse scatters (Features 37 and 38), one cement highway marker (Feature 20), a wooden culvert (Feature 35), and a rock gutter (Feature 33) associated with Segment J also may be adversely affected by the Project. The rock gutter is a long linear feature made of flat stone slabs set in cement; it lines the roadway edge on some slopes to control erosion by channeling runoff away from the road. These features will be avoided and protected to the greatest extent feasible, but the precise nature and extent of effects cannot be determined until the field inspection is conducted immediately prior to construction. If the pre-construction field inspection determines that these features will be affected, PG&E shall perform additional documentation of the rock and wooden culverts and historic highway marker prior to construction using appropriate recording procedures determined in consultation among the BLM, California State Historic Preservation Officer, and DTSC. Also, prior video recordings of Segment J should be used to produce a DVD of the road segment and its associated features. Additionally, if the highway marker (Feature 20)

cannot be avoided and protected during construction, PG&E shall remove the object prior to disturbance and determine its disposition in consultation with the BLM and DTSC. Options for disposition may include replacement at its original location following Project completion, placement in an alternative location to be determined, or use as part of an interpretative display. The refuse scatters (Features 37 and 38) represent discrete roadside dumping episodes. Each feature was recorded thoroughly during the previous field surveys; nonetheless, each will be revisited prior to construction to collect any additional information not captured during the prior documentation and ensure that the archaeological data potential of these features has been thoroughly captured.

- o Segment L: To remedy the adverse effect on the short stretch of Segment L where the liquid conveyance pipeline and conduits will be buried and two wells (MW-1 and IRL-2) will be installed, disturbed areas will be restored and compacted using materials that blend with the adjoining roadway material to the extent feasible. Prior to commencement of construction activities, photo documentation will be conducted to both capture the character-defining features of the roadway and provide guidance for restoration. To protect remaining undisturbed roadway surfaces, use of this segment by construction vehicles and equipment shall be limited to the extent feasible. Prior to construction to provide guidance for any needed restoration, PG&E will complete HAER Level II documentation following NPS Standards for the affected portions of the Segment L roadbed and the associated character defining features.
- o Segment X: PG&E anticipates installing approximately 35 wells along a 2,000-foot-long section of the eastern portion of Segment X and the underlying railway bed (CA-SBR-6693H). In addition, a liquid conveyance pipeline and conduits will be buried along the east shoulder of Route 66 and the railway bed. To remedy adverse effects on these features, PG&E shall document any newly exposed road/railway historic materials identified during monitoring. Additionally, the trench along the east shoulder of Route 66 and railway bed will be compacted. For two buried pipeline trenches intersecting the roadway, Route 66 will be

repaved to County standards. For the proposed well locations along the east side of the roadway at the road surface level, the disturbed surface will be restored using local materials to blend with the surrounding landscape to the extent feasible. For the numerous wells within the road/rail substructure itself, Route 66 will be repaved to County standards as will the two pipeline crossings. Off-road access shall be limited to the extent feasible for construction vehicles and equipment along this segment.

- Segment Y: To remedy any project impacts on Segment Y, the pipeline trench along the west shoulder of Route 66 will be compacted and the portion of the pipeline trench under the railroad undercrossing and within Route 66 will be repaved to County standards.

Periodic site monitoring and condition assessments are critically important treatment measure to ensure known archaeological and historical sites within the Project Area and Area of Potential Effect are adequately protected. PG&E shall pursue the following actions in this regard:

- Continue implementing the periodic monitoring and condition assessments during the remedy construction phase in a manner that considers all historic properties, as directed by §6.6.5 of the CHPMP and Final SEIR Mitigation Measure CUL-1a-3a.
- Prior to completing the remedy construction phase, evaluate the monitoring program and propose changes that take into account ongoing site access problems, potential impacts to sensitive resources by the monitoring activities themselves, and site locations that pose safety hazards to employees, contractors, and monitors.
- The revised periodic monitoring strategies shall take into account monitoring at specific sites performed during construction of the final remedy. The results of construction monitoring shall be included in the next periodic monitoring event to avoid duplication in site visits and unnecessary site impacts.

- Continue monitoring those sites potentially vulnerable to future effects associated with the Project on a periodic schedule determined in consultation with BLM and interested parties; the CHPMP anticipates that the frequency of periodic monitoring will decline over time.
- For continued site visits, the Site Condition Assessment Record (SCAR) forms shall be maintained to identify existing conditions and any trends in impacting activities that may be occurring.
- After each periodic monitoring event, PG&E and other interested parties will assess the effectiveness of the program and consider possible adjustments.
- Procedures for monitoring ground-disturbing construction activities are provided in the CHPMP §6.6.4, the SEIR MM CUL-1b/c-4a, and CIMP §2.10, §2.12 and §2.13. Protocols applicable to all are provided in Appendix C (Tribal and Archaeological Monitoring Protocol) of the PA. As with periodic site monitoring and condition assessments, construction monitoring is a critically important treatment measure to ensure protective measures are implemented effectively and to identify and provide appropriate protection for any previously undiscovered archaeological and historical sites encountered during construction. As stated in the CHPMP §6.6.4, “The purpose of the monitoring will be to ensure that construction does not adversely affect the Topock Maze, the TCP within the APE, Route 66, or any other historic properties within the APE.” Through implementation of the above Project guidance, PG&E shall pursue the following actions:
 - Notify qualified archaeological and Tribal monitors at least two weeks in advance and invite to be on site during grading, trenching, boring, drilling, or other excavation for new injection, extraction, or monitoring wells, new pipelines, new treatment facilities, new access roads, new staging areas other new transportation facilities, or other new Project components (CHPMP §6.6.4; CUL-1b/c-4a; CIMP §2.12).
 - Ensure Tribal and archaeological monitors comply with all safety requirements (CHPMP §6.6.4).

- Ensure monitors are qualified, and perform their duties as specified in Appendix C of the PA.
- Monitor remediation facilities and staging areas during construction (CIMP §2.16).
- Ensure monitors work as part of the construction crew, participating in all daily construction meetings and advising the Project Manager and construction site superintendent regarding avoidance of effects and other cultural resource issues.
- Maintain Daily Monitoring Logs detailing results of the monitoring effort and:
 - Keep Daily Monitoring Logs on file with PG&E's archaeologist and the PG&E Topock Site Manager.
 - Forward copies of the Daily Monitoring Logs to the BLM and, upon request, to any of the concerned Tribes (CHPMP §6.6.4).
- During construction PG&E shall document monitoring activities in monthly reports (CUL-1b/c-4a).
- Tribal monitors shall prepare and submit Daily Monitoring Logs (CIMP §2.12).
- Ensure monitors record date- and time-stamped digital photos of cultural sites to document site conditions at the time of surface disturbance (CHPMP §6.6.4).
- After each monitoring event, assess the effectiveness of the construction monitoring program and consider possible adjustments.
- If monitoring reveals previously unknown remains during grading, trenching, or other construction work, cease activities in the vicinity of the discovery until the archaeological and/or Tribal monitor has evaluated the discovery and a course of action is decided upon in accordance with the Discovery Plan (CHPMP §6.6.4; CHPMP, Appendix C; CIMP§2.15).

- Ensure the following treatment actions proposed for the TCP are implemented prior to the initiation of on-the-ground disturbance activities:
 - Temporary barriers are placed around sensitive locations near proposed actions (CIMP § 2.15).
 - Tribal access for cultural activity purposes is provided to the extent feasible during construction (CIMP §2.11).
 - Cultural sensitivity training is provided to workers (PA, Appendix C; CUL-1a-13a).
 - Plant transplantation/monitoring is implemented according to protocols (CUL-1a-5; CIMP, Appendix A).
 - Clean soil cuttings are repatriated according to protocols (CUL-1a-17).
 - The public education initiative is implemented, including brochure (CUL-1a-3c).
- In regard to treatment actions proposed for NOTH/Route 66, ensure monitors conduct a pre-construction field verification to examine proximity of flagged activity areas to resources.
- Ensure appropriate paints are used to minimize visual intrusions and mature plants are placed where feasible for screening (CIMP §2.9).
- Prior to completing the remedy construction phase:
 - Evaluate implications for the periodic monitoring program and propose changes that take into account ongoing site access problems, potential impacts to sensitive resources by the monitoring activities themselves, and site locations that pose safety hazards to employees, contractors, and monitors.

- Provide results of construction monitoring in the next periodic monitoring event to avoid duplication in site visits and unnecessary site impacts.
- (x) Riverbank extraction wells, RB-1 through RB-5, shall be installed, tested and ready to be used for extraction to capture hexavalent chromium and/or remedy by-products prior to initiation of carbon injection at the in situ reactive zone (IRZ). However, pipelines associated with the Riverbank extraction wells as specified in the final design can be installed at a later phase.
- (xi) PG&E shall provide validated groundwater monitoring data to the Agencies within 60 days of sample collection. PG&E shall provide advanced notifications to Agencies in accordance with the Consent Decree and the Corrective Action Consent Agreement of any resampling and confirmation sampling events.
- (xii) PG&E shall revisit and calibrate the groundwater flow and solute transport model in accordance with the latest model Appendix B of the design (currently as part of the updated and revised groundwater modeling report of February 2016 and its January 2017 addendum) unless otherwise directed by DTSC. The groundwater model shall be updated with data collected within the previous year to determine if there are deviations from the conceptual site model, fate and transport of chromium, remedy by-products or groundwater quality changes because of the operation of remedy including freshwater extraction in Arizona.
- (xiii) PG&E shall install two monitoring wells in the Arizona peninsula, monitoring well MW-X shall be installed at location as shown in the November 2015 final design. However, monitoring well MW-Y shall be at the Y alternate location as shown in Volume 2, Final SEIR Figure 3-3d.
- (xiv) PG&E shall obtain access agreements to properties encompassed within any proposed construction at least sixty (60) days prior to the project initiation meetings for access to properties encompassed within the scope of the respective phase of construction, as these terms are described in the C/RAWP. In the event that an agreement for access is not obtained at least sixty (60) days prior to the project initiation meetings for Phase 1 and Phase 2 of construction, respectively, or within thirty (30) days of the date that the need for access becomes known to PG&E, PG&E shall notify the DTSC in writing

within fourteen (14) days thereafter regarding both the efforts undertaken to obtain access and its failure to obtain such agreements.

- (xv) PG&E shall conduct opportunistic sampling when visual staining or unexpected contamination is encountered when installing pipelines and infrastructure pursuant to C/RAWP Table 5.1-1. PG&E shall coordinate with DTSC on the necessity and location of detailed trench logs or photographic logs where construction passes through soil investigation areas identified as Areas of Concern (AOCs) or SWMUs in the Soil RFI Workplan.
- (xvi) Prior to use of either Well HNWR-1A or Site B water for injection, PG&E shall notify Agencies and Interested Tribes if the water temperature at the point of extraction exceeds anticipated normal groundwater temperatures, in particular if extracted water is considered geothermic. This notification can be accomplished by submitting an initial water quality sampling report in advance of injection startup.
- (xvii) PG&E shall minimize degradation of the surface environment when using water for surface dust suppressant. If IM3 water is to be used, the total dissolved solids (TDS) of the water shall be equal to or better than the TDS of water from Well Topock 2/3.
- (xviii) PG&E shall monitor TDS trends downgradient of the remedy injection wells, in particular IRL-1 and IRL-2. If TDS concentrations in the shallow zone of the downgradient monitoring wells shows an increasing trend, PG&E shall modify the injection procedure to reduce TDS impact to the upper shallow zone of the aquifer.
- (xix) For early detection of potential adverse impacts to groundwater aquifer and protection of groundwater users in Arizona, PG&E shall evaluate installation of a monitoring well between HNWR-1A and the Topock 2/3 production wells. Agencies will consult with Tribes, signatories, and invited signatories to the PA regarding the installation of this well.
- (xx) PG&E shall collect and conduct quantitative analysis for major cation and anions (e.g. Sodium, Potassium, Ammonium, Calcium, Magnesium, Bromide, Fluoride, Sulfate, Nitrate-N, Nitrite, and Chloride) to establish baseline values prior to commencement of injection. PG&E shall continue to collect and analyze for cation and anions at a

minimum of twice a year for comparison to baseline. PG&E can modify frequency of sampling with DTSC concurrence.

- (xxi) As soon as possible, PG&E shall prepare an addendum or revision to update the Soil Management Plan based on risk evaluation to define the screening levels for non-hazardous soil.
- (xxii) The use of various staging areas shall be in conformance with Table 4.2-1 of the C/RAWP, Section 4, Site Management Plan. PG&E shall continue to evaluate the use of staging areas during construction and an effort should be made to limit the actual area used, and to minimize impacts on these areas and their surroundings.
- (xxiii) PG&E shall minimize impacts from vehicular movement while conducting all work associated with construction, operation, maintenance, and periodic monitoring. PG&E shall review its Standard Operating Procedures and recommend vehicular traffic minimization efforts, if possible, for DTSC's review and consideration in the quarterly reports.
- (xxiv) PG&E states that nighttime access is not normally required for the remedy buildings and structures; therefore, PG&E shall not install lighting that are photocell activated outside of the PG&E property. Within 6 months of design approval, operation of any necessary lighting, including but not limited to the MW-20 Bench, shall be either motion or manually activated and used only when necessary for health and safety of workers.
- (xxv) Except for extenuating circumstances approved by DTSC during pilot drilling of the IRZ wells along the IRZ line, PG&E shall not temporarily decommission by backfilling or collapsing a borehole with intent to over drill in the future for well installation. Practice of backfilling or collapsing a borehole is prohibited for any monitoring well installation.
- (xxvi) PG&E shall notify the Agencies within a reasonable time prior to installation of "jumper" pipes to the IM-3 injection piping. PG&E shall photo document this installation and decommissioning of the "jumper" as part of the monthly progress report.
- (xxvii) PG&E shall provide all surveying control points used for construction as part of the Construction Completion Report.

- (xxviii) Prior to ground disturbing activities, PG&E shall conduct a new high-resolution aerial photograph of the Project Area to document pre-construction conditions. PG&E shall provide copies of the image file to the Agencies, Interested Tribes, and stakeholders. The photograph(s) shall cover the entire Project Area (as defined for example in Figure 3-3 of the Final SEIR) and shall be kept as reference for site closure and restoration.
- (xxix) PG&E shall provide concrete color pigment information to Agencies and Tribes prior to initial casting in place for concrete.
- (xxx) PG&E shall make available in a reasonable timeframe all notes, photographs, and entries of the maintenance management system to the Agencies when requested.
- (xxxi) PG&E shall ensure the implementation of the following sustainability factors and BMPs as described in the Final SEIR (see Section 4.8, Utilities, page 4.8-28) and as described in the Final Remedy Design (Appendices C and D).
- Use energy generated from non-petroleum sources where possible, such as small photovoltaic solar panels at select remote well locations, Remedy-produced Water Conditioning Building, and Operations Building.
 - Use of alternative fuels, e.g., biodiesel during construction, operation and maintenance, and decommissioning activities. The nearest retail vender of biodiesel is Loves Travel Store at the intersection of Interstate 40 and Highway 95 about 10 miles east of the Station.
 - Use energy efficient architectural elements.
 - Use energy efficient equipment and lighting.
 - Use EPANET water supply program to design the piping network and minimize energy consumption.
 - Locate the conditioned water tank to allow for gravity flow to injection wells to minimize energy use.

- Operation and maintenance activities will minimize energy use by optimizing equipment via routine maintenance and minimizing energy consumption during peak energy use periods. The O&M Manual (Appendix L of the Final Remedy Design) describes the maintenance activities.

(xxxii) PG&E shall ensure the use of certain identified equipment (see **Table 1** below), or industry equivalent or better in terms of reducing noise and air emissions, in order to ensure that the less-than-significant impact conclusions for noise and air quality remain applicable.

IRZ Carbon Amendment Building

- The 3 carbon substrate pumps shall operate at a sound level of 64 A-weighted decibels (dBA) at 1 meter or less (operating at $\frac{3}{4}$ horsepower according to Appendix D).
- The well maintenance reagent pump shall operate at a sound level of 64 dBA at 1 meter or less (operating at $\frac{3}{4}$ horsepower according to Appendix D).
- The 2 sump pump shall operate at a sound level of 72 dBA at 1 meter or less (operating at .5 horsepower and 3450 rpm according to Appendix D).
- The clean-in-place reagent pump shall operate at a sound level of 77 dBA at 1 meter or less (operating at 10 horsepower and 3500 rpm according to Appendix D).
- The conditioned water injection pump shall operate at a sound level of 76 dBA at 1 meter or less (operating at 5 horsepower and 3500 rpm according to Appendix D).
- The produced water transfer pump shall operate at a sound level of 80 dBA at 1 meter or less (operating at 25 horsepower and 3500 rpm according to Appendix D).
- The booster pump shall operate at a sound level of 76dBA at 1 meter or less (operating at 5 horsepower and 3500 rpm according to Appendix D).

Topock Compressor Station (TCS) Pond

- The natural gas generator shall operate at a sound level of 79 dBa at 7 meters or less (for example, the Cummins GGMC in Appendix D).

- The booster pump shall operate at a sound level of 76 dBA at 1 meter or less (operating at 5 horsepower and 3500 rpm according to Appendix D).

RPWCP Building

- All pumps within this building shall be insulated with metal walls on the second floor and with concrete walls on the first floor.

Table 1 - EQUIPMENT USED DURING FINAL GROUNDWATER REMEDY PROJECT

Type of Equipment Used	Number at Peak Week			
	Pre-Construction	Remedy Construction		IM-3 Decommissioning
		Phase 1	Phase 2	
2,000 Gal Water Truck	1	20	17	2
Backhoe, Medium	1	1	1	
Backhoe, Small		5	6	1
Concrete Pump Trailer-Mounted	1	1	1	
Concrete Ready-Mix Truck	1	11	3	
Crane, 40-ton, Truck Mounted, All-Terrain	1	1	1	1
D4 Dozer		2		
Drill Rig, Rotary		2	2	
Drill Rig, Rotosonic		2	2	
Drill Rig Support (pipe truck/tender)		4	4	
Drilling Development/Testing Rig		2	2	
Dump Truck	1	1	1	2
Excavator, Large with Demolition Hammer				1
Excavator, Large with Pulverizer				1
Excavator, Large with Shear				1
Excavator, Medium	1	6	7	
Excavator, Small/Mini		2	3	
Fork Lift, Long Reach	1	5	5	1
Loader, with 4-Yard Bucket	1	7	7	2
Man/Boom Lift	1	1	1	
Mobile Concrete Crusher				1
Plate Vibratory Compactor		8	9	
Scraper		3		
Soil Compactor - 24" Walk Behind		5	7	
Soil Compactor - 54"	1	5	4	

2.5 years 2 years

3. The CEQA Findings of Fact and Statement of Overriding Considerations for the Topock Compressor Station Final Groundwater Remediation Project, attached hereto as "Exhibit 1" and incorporated herein by reference, are hereby adopted.
4. The MMRP for the Topock Compressor Station Final Groundwater Remediation Project, attached hereto as "Exhibit 2" and incorporated herein by reference, is hereby adopted.
DTSC directs staff to pay the applicable fees to DFW and file a Notice of Determination (NOD) with the California Governor's Office of Planning and Research regarding this determination within five working days and to mail notice to any person who has filed a written request for notices.

PASSED AND ADOPTED by the DTSC on April 24, 2018

CALIFORNIA DEPARTMENT OF
TOXIC SUBSTANCES CONTROL

By Karen Baker
Karen Baker, CEG, CHG
Branch Chief
Office of Geology

Exhibit 1 to the Statement of
Decision and Resolution of Approval

CEQA Findings of Fact and
Statement of Overriding
Considerations

TOPOCK COMPRESSOR STATION FINAL GROUNDWATER REMEDIATION PROJECT DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

CEQA Findings of Fact and Statement of Overriding
Considerations

Prepared for the
California Department of Toxic Substances Control

April 2018

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Attachment 1: Table of Significant Impacts, Mitigation Measures, and CEQA Findings of Fact

1. Statement of Findings

The California Environmental Quality Act (CEQA) requires that public agencies shall not approve or carry out a project for which an environmental impact report (EIR) has been certified that identifies one or more significant adverse environmental effects of a project unless the public agency makes one or more written Findings for each of those significant effects, accompanied by a brief explanation of the rationale for each Finding (CEQA Guidelines Section 15091). This document presents the Findings made by the California Department of Toxic Substances Control (DTSC), in its capacity as the CEQA lead agency, regarding the Pacific Gas and Electric Company (PG&E) Topock Compressor Station (Station) Final Groundwater Remediation Project (Project; Final Groundwater Remedy), evaluated in the Final Subsequent Environmental Impact Report (Final SEIR) for the Project.

These Findings are organized into the following sections:

Section 1.1 provides an introduction to these Findings.

Section 1.2 includes a summary of the Project.

Section 1.3 provides a history of the CEQA environmental review process conducted.

Section 1.4 describes the CEQA environmental review process for the SEIR.

Section 1.5 contains DTSC's general Findings about the Project.

Section 1.6 contains DTSC's Findings regarding mitigation measures for the Project.

Section 1.7 contains DTSC's Findings of Fact for the Project.

Section 1.8 contains DTSC's Findings regarding alternatives to the Project.

Section 1.9 contains DTSC's Statement of Overriding Considerations for the Project.

Section 1.10 describes the Mitigation Monitoring and Reporting Program (MMRP) for the Project.

Section 1.11 provides a list of references.

1.1 Introduction

1.1.1 Requirements for Findings of Fact

CEQA requires public agencies to consider and identify the reasonably foreseeable and potentially significant adverse effects of their discretionary approvals of projects on the environment and, when feasible, to adopt and implement mitigation measures or alternatives that avoid or substantially lessen the significant effects of those projects. Specifically, Public Resources Code Section 21002 provides that "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the

significant environmental effects of such projects [.]” The same section states that the procedures required by CEQA “are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects.” Section 21002 goes on to state that “in the event [that] specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof.”

Pursuant to the policy stated in Public Resources Code Sections 21002 and 21002.1, no public agency shall approve or carry out a project for which an EIR has been certified that identifies one or more significant effects on the environment that would occur if the project is approved or carried out unless both of the following occur:

- (a) The public approving agency makes one or more of the following findings with respect to each significant effect:
 - (1) Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.
 - (2) Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
 - (3) Specific economic, legal, social, technological, other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the EIR.
- (Public Resources Code Section 21081, subd. (a); see also CEQA Guidelines Sections 15091, subd. (a).)
- (b) With respect to significant effects that were subject to Findings under paragraph (3) above, the public agency finds that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment.

(Public Resources Code Section 21081, subd. (b).)

Public Resources Code Section 21061.1 defines “feasible” to mean “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors.” CEQA Guidelines Section 15364 adds another factor in determining feasibility: “legal” considerations. (See also *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 565 (“*Goleta II*”).)

The concept of “feasibility” also encompasses the question of whether a particular alternative or mitigation measure promotes the underlying goals and objectives of a project (*City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 410, 417 (*City of Del Mar*).); see also *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490, 1506-1509 [court upholds CEQA Findings rejecting alternatives in reliance on applicant’s project objectives]; *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal. App. 4th 957, 1001 [“an alternative ‘may be found infeasible on the

ground it is inconsistent with the project objectives as long as the finding is supported by substantial evidence in the record”]; *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165, 1166 [“feasibility is strongly linked to achievement of each of the primary [project] objectives”]).

Moreover, “feasibility” under CEQA encompasses “desirability” to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, and technological factors.” (*City of Del Mar, supra*, 133 Cal.App.3d at p. 417; see also *Sequoyah Hills Homeowners Assn. v. City of Oakland* (1993) 23 Cal.App.4th 704, 715; *California Native Plant Society v. City of Santa Cruz, supra*, 177 Cal.App.4th at p. 1001 [after weighing “‘economic, environmental, social, and technological factors’ ... ‘an agency may conclude that a mitigation measure or alternative is impracticable or undesirable from a policy standpoint and reject it as infeasible on that ground’”].)

With respect to a project for which significant impacts cannot be avoided or substantially lessened through feasible mitigation measures or alternatives, a public agency, after adopting proper findings, may nevertheless approve the project if the agency first adopts a statement of overriding considerations setting forth the specific reasons why the agency found that the project’s “benefits” rendered “acceptable” its “unavoidable adverse environmental effects.” (CEQA Guidelines, Sections 15093, 15043, subd. (b); see also Public Resources Code, Section 21081, subd. (b).) The California Supreme Court has stated, “[t]he wisdom of approving...any development project, a delicate task which requires a balancing of interests, is necessarily left to the sound discretion of the local officials and their constituents who are responsible for such decisions. The law as we interpret and apply it simply requires that those decisions be informed, and therefore balanced” (*Goleta II, supra*, 52 Cal.3d at page 576).

Because the Final SEIR identified significant effects that may occur as a result of the Project, and in accordance with the provisions of CEQA and the CEQA Guidelines described above, DTSC hereby adopts these Findings as part of the approval of the Project. In making these Findings and in adopting the Statement of Overriding Considerations, DTSC has independently reviewed the Draft Subsequent Environmental Impact Report (Draft SEIR), and the Final SEIR for the Project, as well as all other information in the record of proceedings (Record) on this matter. These Findings constitute DTSC’s best efforts to set forth the evidentiary and policy bases for its decision to approve the Project in a manner consistent with the requirements of CEQA. These Findings, in other words, are not merely informational, but rather constitute a binding set of obligations that come into effect with DTSC’s approval of the Project.

1.1.2 Documents Used as Basis for Findings and Approval of the Project

The record of proceedings for DTSC’s decision on the Project, including the substantial evidence supporting adoption of these Findings include, but are not limited to, the following documents:

- Topock Compressor Station Groundwater Remediation Project Final EIR, certified on January 31, 2011 (SCH No. 2008051003), and all appendices and documents cited within;

-
- Settlement Agreement, Judgment and related documents Between Fort Mojave Indian Tribe and DTSC, Case No. 34-2011-80000802-CU-WM-GDS, Action Filed March 2, 2011;
 - Settlement Agreement, Judgment and related documents between Fort Mojave Indian Tribe and Pacific Gas & Electric Company, Case No. 34-2011-80000802-CU-WM-GDS, Action Filed March 2, 2011;
 - The Notice of Preparation (NOP) and all other public notices issued by DTSC in conjunction with the Project;
 - Topock Compressor Station Final Groundwater Remedy Project Draft SEIR prepared for DTSC with support by Environmental Science Associates (ESA), January 2017, and all appendices and supporting documents cited therein;
 - All comments submitted by agencies, Tribes, or members of the public during the comment period on the Draft SEIR;
 - Topock Compressor Station Final Groundwater Remedy Project Final SEIR prepared for DTSC with support by ESA dated December 2017, which includes comments received on the Draft SEIR, responses to those comments, appendices, and revisions to the Draft SEIR;
 - Communication Protocol for Future Activity Allowance;
 - Errata and Revisions to the Final SEIR dated April 2018;
 - The MMRP for the Project;
 - All Findings and resolutions adopted by the DTSC in connection with the Project and all documents cited or referred to therein;
 - The Basis of Design Report/Final (100%) Design Submittal and Construction/Remedial Action Work Plan (C/RAWP) for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles California prepared by PG&E;
 - All reports, studies, memoranda, maps, staff reports, or other planning documents relating to the Project prepared by DTSC, consultants to DTSC, or responsible or trustee agencies with respect to DTSC's compliance with the requirements of CEQA and with respect to the Project;
 - All documents submitted to DTSC by other public agencies or members of the public in connection with the Project, up through the approval of the Project;
 - Any documentary or other evidence submitted to DTSC, at such information sessions, public meetings, and public hearings;
 - Matters of common knowledge to DTSC, including but not limited to federal, state, and local laws and regulations;
 - Any documents expressly cited in these Findings, in addition to those cited above; and
 - Any other materials required for the Record by Public Resources Code Section 21167.6, subdivision (e).

These Findings are based upon substantial evidence in the entire Record before DTSC. The references to the Draft and Final SEIR set forth in the Findings are for ease of reference and are not intended to provide an exhaustive list of the evidence relied upon for these Findings.

Pursuant to CEQA Guidelines Section 15091, subdivision (e), Aaron Yue of DTSC is the official custodian of the documents and other materials that constitute the Record upon which the decision is based, and such documents and other materials are located at the offices of DTSC, which are located at DTSC, 5796 Corporate Avenue Cypress, California 90630. Copies of the Draft and Final SEIR are also available at DTSC's website, www.dtsc-topock.com/.

1.2 Summary of the Project

The following information is intended to provide a summary of the key components of the Final Groundwater Remedy Project and conclusions of the Final SEIR. Additional detailed information concerning each component of the Project is set forth in Chapter 3, "Project Description," of the revised Draft SEIR, which is included in the Final SEIR as Volume 2.

1.2.1 Background and Need for Project

Groundwater beneath and near the Station has been contaminated through the discharge and release of hexavalent chromium [Cr(VI)], and total chromium [Cr(T)] in the areas known as Bat Cave Wash and East Ravine. Other chemicals of potential concern (COPCs) that might be associated with historical releases from the Station are molybdenum, selenium, and nitrate.¹ In 2004, DTSC determined that immediate actions were necessary within the Project Area as precautionary measures to ensure that Cr(VI)-contaminated groundwater did not reach the Colorado River. Interim Measures (IMs) were therefore instituted to protect the Colorado River. IMs are cleanup actions that are taken to protect public health and the environment while long-term solutions are being developed and evaluated. There have been three separate but related IMs at the Station since 2004 in response to the need to control the groundwater plume. IM-1, IM-2, and mostly IM-3, are collectively referred to as "the Interim Measure," or "the IM."

Investigation and remediation at the Station and the surrounding area (Project Area) is being conducted under the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). Both RCRA and CERCLA are federal laws. RCRA provides a framework for the U.S. Environmental Protection Agency (USEPA) to remediate hazardous waste sites in the United States. The authority under RCRA, however, can be delegated to states. In California, DTSC implements RCRA under such delegated authority from the federal USEPA through state law.

In 2011 DTSC evaluated the potentially significant adverse environmental effects of various potentially feasible remedies associated with cleanup of groundwater contamination at the Station. As a result, DTSC certified the Topock Compressor Station Groundwater Remediation Project Final EIR (Groundwater FEIR), adopted the CEQA Findings of Fact and Statement of

¹ Although the Final Groundwater Remedy Project is focused on the Cr(VI), the Final Groundwater Remedy Project is also expected to reduce the concentrations of selenium or nitrate and not affect molybdenum.

Overriding Considerations, and adopted the Mitigation Monitoring and Reporting Program (MMRP) (DTSC 2011). Based on these documents, as well as all other information obtained through the administrative process, DTSC approved a groundwater remedy design that consists of in situ treatment with freshwater flushing (referred to as “Alternative E” in the Groundwater FEIR) (DTSC 2011). In 2013, DTSC adopted an Addendum to the Groundwater FEIR, which expanded the Project Area in Arizona and considered the potential environmental effects of alternate well locations for a freshwater source located in Arizona (DTSC 2013).

Following certification of the Groundwater FEIR, PG&E initiated an iterative design process by preparing the preliminary (30%), interim (60%), pre-final (90%), and supplemental pre-final 90% designs for the selected groundwater remedy in accordance with the Corrective Action Consent Agreement process. DTSC provided Interested Tribes² and key stakeholders with a review and comment period at each design phase. Over a 4-year period, DTSC and PG&E, as well as the U.S. Department of the Interior (DOI), worked with Interested Tribes, landowners, and other stakeholders to gather input and address comments, collect new data, and develop the Final Remedy Design. After DTSC and DOI issued final design directives (i.e., directives for proceeding with the final design) to PG&E, on November 18, 2015, PG&E submitted the Final 100% BOD, referred to as the Final Remedy Design (which includes the Operation & Maintenance Manual), and the Construction/Remedial Action Work Plan (C/RAWP) to DTSC and DOI for approval consideration. PG&E prepared and completed the Final Remedy Design pursuant to the requirements of the Corrective Action Consent Agreement entered into by PG&E and the DTSC in 1996 and the Remedial Design/Remedial Action Consent Decree, executed by PG&E and the United States, on behalf of the DOI, which was approved by the U.S. District Court for the Central District of California in November 2013. Supplemental and Errata Information was provided to DTSC in November 2016, which corrected minor inconsistencies and clarifications to the Final Remedy Design. The Supplemental and Errata Information is therefore incorporated in the Final Remedy Design. The groundwater remedy is designed to comply with the Groundwater FEIR mitigation measures and applicable regulations, and throughout the design period PG&E submitted quarterly mitigation measure compliance reports documenting actions taken to comply with these mitigation measures. The Final SEIR for the Final Groundwater Remedy Project is based on the Final Remedy Design and the C/RAWP, which reflect modifications and clarifications by PG&E as a result of the collaborative and iterative design process.

The Groundwater FEIR included a general description of the elements that would make up the selected groundwater remedy (e.g., remediation wells, monitoring wells, pipelines, freshwater intake locations, and associated infrastructure) and considered the potentially significant adverse environmental impacts that would result, to the extent such impacts were reasonably foreseeable given the level of detail known at the time. The Final Groundwater Remedy Project provides more detail on the ultimate number and specific locations of the remedy elements reflected in the

² Six Native American Tribes, the Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Hualapai Indian Tribe, and the Fort-Yuma Quechan Indian Tribe, have participated in Topock project activities in the past. Based on recent engagement, Tribes that are actively participating in the Topock project and are hereafter referred to as “Interested Tribes.” The first five Tribes mentioned are considered “Interested Tribes,” as the Fort-Yuma Quechan Indian Tribe is no longer actively participating in the process.

Final Remedy Design. The Final SEIR considers the differences in environmental impacts of the Final Remedy Design in comparison to the effects identified in the Groundwater FEIR and the 2013 Addendum to the Groundwater FEIR. The analysis focused on the new design details that were not yet known at the time the Groundwater FEIR was certified.

1.2.2 Ongoing Soil Investigation

In addition to groundwater contamination, investigation activities conducted to date within and in the vicinity of the Station indicate that contaminants have been released to soil through past management practices such as those associated with hazardous materials handling/disposal, waste discharges, spills, and leaks of cooling water and other fluids at the Station. Investigation and any potential cleanup of contaminated soils associated with the long-term operation of the Station are currently being conducted under both RCRA and CERCLA.

On August 24, 2015, DTSC approved the Topock Soil Investigation Project based on the Topock Compressor Station Soil Investigation Project Final EIR. The primary purpose of the Soil Investigation Project was to gather sufficient soil samples to be able to reliably characterize the nature and extent of soil and sediment contamination within the project site. The soil investigation project includes soil sampling and analysis as described in the Soil Work Plan (CH2M Hill 2013a) and the potential need for bench scale tests, pilot studies, and geotechnical evaluations to support a future Soil CMS/FS and plant or other biota sampling activities to support an ecological risk assessment within, and in the vicinity of, the Station. The Soil Work Plan sampling began in October 2015 and continued through April 2017; additional activities described above associated with investigation have not yet been completed. Implementation of the soil investigation project will provide DTSC with sufficient data for the completion of the RCRA Facility Investigation/Remedial Investigation (RFI/RI) process that is consistent with state and federal guidance for site investigations and would support evaluation of possible soil cleanup action(s) if determined necessary. The results of the investigation activities will be compiled and combined with past Station investigation data sets for the preparation of the Final RFI/RI Report Volume 3 (Soil), which will enable the evaluation and selection of corrective measures, if necessary, in a future Soil CMS/FS. If any soil remedy is proposed, it would be implemented following completion of the Soil CMS/FS and associated environmental review as required by CEQA.

1.2.3 Project Objectives

The fundamental objective of the proposed Project as presented in the Groundwater FEIR, certified in January 2011, is to clean up the groundwater contamination related to the historical release of chemicals at the Station, including into Bat Cave Wash and the East Ravine near the Station, in a manner that would be consistent with all applicable regulatory requirements and to do so within a reasonable period of time when compared between viable alternatives. The Remedial Action Objectives (RAOs) are developed by considering the conclusions of the Ground Water Human Health and Ecological Risk Assessment and identification of applicable or relevant and appropriate requirements (ARARs), which established specific cleanup goals for Cr(VI) and Cr(T), as well as addressing the COPCs (molybdenum, selenium, and nitrates) through

monitoring and institutional controls. The RAOs were used for remedy selection in the Groundwater FEIR.

The following are the Project RAOs for groundwater:

- Reduce the mass of Cr(T) and Cr(VI) in groundwater at the Project Area to achieve compliance with the ARARs,³ which will be achieved through the cleanup goal of the regional background concentration of 32 µg/L of Cr(VI).
- Ensure that the geographic location of the target remediation area (contaminated groundwater plume) does not permanently expand following completion of the final remedy.
- Prevent ingestion of groundwater as a potable water source having Cr(VI) in excess of the regional background concentration of 32 micrograms per liter (µg/L).
- Prevent or minimize migration of Cr(T) and Cr(VI) in groundwater to ensure concentrations in surface water do not exceed water quality standards that support the designated beneficial uses of the Colorado River (11 µg /L Cr[VI]).

In addition to the objectives stated above, the following objectives are defined by DTSC as part of the Final SEIR pursuant to CEQA Guidelines Section 15124(b):

- Provide consistency with the Remedial Design/Remedial Action Consent Decree between PG&E and the United States which was approved by the U.S. District Court for the Central District of California (November, 2013), the DOI/DTSC Memorandum of Understanding concerning the coordination in overseeing the implementation of the groundwater response action (November 22, 2011), and any other legal agreements applicable to the Project, including the 2006 and 2012 Settlement Agreements entered into between DTSC and the Fort Mojave Indian Tribe (FMIT).
- Achieve the cleanup levels or performance goals delineated in the DTSC's Statement of Basis and the DOI's Record of Decision for the final groundwater remedy.
- Protect biological, historical, and cultural resources by minimizing ground disturbance to the extent feasible.
- Minimize aesthetic impact to the extent feasible by limiting the amount of aboveground infrastructure.
- Consider public safety, ensuring efficiency, and compliance with health and safety standards.

³ CERCLA Section 121 requires cleanups to meet ARARs: any "legally applicable or relevant and appropriate standard, requirement, criteria or limitation" that has been promulgated under federal or state environmental laws. The ARARs include such things as the federal and state "Safe Drinking Water Act" and the Solid Waste Control Act's land disposal restrictions.

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- Ensure remedy achieves compliance with RAO's within a reasonable time frame as required by California State Water Resources Control Board (SWRCB) Resolution No. 92-49.

1.2.4 Project Location

The Project Area encompasses the Station, located in the Mojave Desert approximately 12 miles southeast of the city of Needles, California, and 1 mile southeast of the Moabi Regional Park in California (See Figure 3-1 in Final SEIR, Volume 2, Chapter 3, "Project Description"). The Station itself is located within a 66.8-acre parcel of land owned by PG&E and is approximately one-half mile west of, and directly across the Colorado River from, the community of Topock, Arizona (which is 5 miles south of Golden Shores, Arizona). The Station is approximately 1,500 feet west of the Colorado River and less than 1 mile south of Interstate 40 (I-40).

The Groundwater FEIR identified a 779.2-acre Project Area within which all activities were anticipated to occur. The Addendum to the Groundwater FEIR resulted in an additional 74.5 acres to the Project Area on the Arizona side of the river, to account for the additional freshwater source. Based on the Final Remedy Design, DTSC, in consultation with DOI, further refined the Project Area to include additional areas that may be needed for construction, road improvements, and long-term Project operation. The Project Area also reflects the removal of areas originally included in the Groundwater FEIR, but determined as not necessary for the proposed Project. The resulting Project Area that is the basis for the analyses presented in the Final SEIR is the area in which the Final Groundwater Remedy Project would occur, including construction and long-term operational, restoration, and decommissioning needs. This area encompasses approximately 762 acres. Figure 2-1 in the Final SEIR, Volume 2, Chapter 2, "Introduction," shows the Project Area for the Final Groundwater Remedy Project compared to the Project Area that was analyzed in the Groundwater FEIR and the Addendum to the Groundwater FEIR.

The Project Area includes a 40.3-acre portion of land owned by PG&E as well as additional surrounding areas that could be affected by construction, operation, restoration, and/or decommissioning activities associated with the proposed groundwater remediation activities. As shown in Figure 3-2 of the Final SEIR, Volume 2, Chapter 3 "Project Description," lands within the Project Area in California and Arizona continue to be owned and/or managed by a number of government agencies and private entities, including the Havasu National Wildlife Refuge, which is managed by the U.S. Fish and Wildlife Service (USFWS); lands managed by DOI, Bureau of Land Management (BLM); U.S. Bureau of Reclamation (BOR) managed by BLM; the Burlington Northern Santa Fe Railway (BNSF); California Department of Transportation (Caltrans)-leased land; Arizona Department of Transportation (ADOT); California State Lands Commission (CSLC) lands; lands owned by the FMIT; lands leased by San Bernardino County (and managed by BLM); and privately owned lands.

1.2.5 Description of the Project

As described and considered in the Groundwater FEIR, the Final Groundwater Remedy Project involves in situ treatment of contaminated groundwater with freshwater flushing. In situ treatment of groundwater refers to the reduction in mass, toxicity, mobility, volume, and concentration of

the chromium plume using treatment technologies that treat groundwater in place, as opposed to pumping and circulating water through a separate aboveground treatment plant. In situ treatment would be performed by placing a degradable food-grade organic compound (termed a carbon substrate or carbon amendment) in the groundwater to create reducing conditions to convert Cr(VI) dissolved in groundwater to relatively insoluble trivalent chromium [Cr(III)]. The reduced chromium would precipitate or become adsorbed onto soils below the water table and thereby be removed from groundwater. The organic carbon substrate would be released into the aquifer by injection after mixing on-site with a water source, such as extracted contaminated groundwater or clean water. The Final Groundwater Remedy Project includes the following primary components, which are described in detail in the Final SEIR, Volume 2, Chapter 3, “Project Description,” subsection 3.6.1:

- Development of an in situ reactive zone (IRZ) along National Trails Highway (NTH IRZ) using a line of injection and extraction wells to distribute groundwater amended with a carbon substrate for treatment of Cr(VI).
- Implementation of an inner recirculation loop (IRL) composed of injection wells upgradient of the NTH IRZ plume and extraction wells along the Colorado River that would induce groundwater flow through the NTH IRZ, capture contaminated groundwater downgradient of the NTH IRZ, and control NTH IRZ-generated byproducts.
- Installation of freshwater injection wells upgradient (west and south) of the NTH IRZ to further induce groundwater flow through the NTH IRZ and prevent westward migration of the plume.
- Installation of extraction and injection wells on and near the Station referred to as the Topock Compressor Station Recirculation Loop (TCS Recirculation Loop). This system would capture contaminated groundwater and circulate that groundwater after amendment with a carbon substrate creating an IRZ for the treatment of Cr(VI).
- Construction of a Remedy-Produced Water Conditioning System to treat and condition and reuse water from construction and maintenance activities including well backwashing and rehabilitation, purge water from monitoring well sampling, equipment decontamination wastewater, and rainfall that collects in remedy facility secondary containment. The system includes a contingency Dissolved Metals Removal System to remove scale-forming ions from the remedy-produced water prior to injection, if needed.
- Construction of a Clean-In-Place system for routine maintenance of the NTH IRZ water conveyance pipelines.
- Acquisition of freshwater for injection into the wells included to assist in flushing contaminated groundwater through the treatment zones. The source of the freshwater would be from existing Well HNWR-1A and possibly secondary contingent wells, all located in or near the Havasu National Wildlife Refuge in Arizona. The freshwater flushing system includes the Contingent Freshwater Pre-Injection Treatment System to reduce the concentrations of arsenic, if needed.

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- Construction of monitoring wells to augment the existing monitoring well network to further evaluate site conditions, monitor contaminant levels, and assess the performance of the remediation system.
 - Construction of fluid conveyance, utilities, buildings, and roadways in support of the Final Groundwater Remedy Project, including the following facilities (in addition to those mentioned in the bullets above):
 - TW Bench - operations building and decontamination pad,
 - MW-20 Bench - carbon substrate building, carbon storage tank, reused frac tanks, and truck containment pad,
 - Near Moabi Regional Park - Construction Headquarters, Long-Term Remedy Support Area, Temporary Construction Laydown Area, and the Soil Processing/ Clean Soil Storage Area.
 - PG&E Topock Compressor Station - improvements to the Topock Compressor Station Evaporation Ponds (TCS Evaporation Ponds), and the shared use of the Station's Hazardous Material Storage Building.
 - Implementation of monitored natural attenuation as a long-term component to address residual Cr(VI) that may remain in recalcitrant (difficult-to-treat) portions of the aquifer after optimization of IRZ treatment and flushing.
 - Institutional controls to restrict surface land uses and prevent the use of groundwater until the RAOs are achieved.

In addition to the Project features described above, there may be a need for additional facilities and associated activities beyond the parameters set forth in the Final Remedy Design. A Future Activity Allowance has been included in the Project Description and the SEIR to ensure that a comprehensive environmental analysis is included should additional activities be warranted over the decades long Project implementation. The Future Activity Allowance includes two components, the locations of which are not specifically known at this time: (1) an additional allowance for all Project infrastructure, established at up to 25 percent of the parameter set forth in the Final Remedy Design, and (2) up to 10 additional monitoring well boreholes to be installed in Arizona to assess groundwater levels and chemical constituents changes as a result of continued freshwater pumping to protect private groundwater users. The 25 Percent Potential Allowance is intended to apply to unforeseen activities (not specified in the Final Remedy Design) which may be necessary during both the construction and implementation (operation and maintenance) of the remedy. More information can be found in the Final SEIR, Volume 1, Chapter 3, "Master Response 2: Use of the Future Activity Allowance in the Draft SEIR"; and in Volume 2, Chapter 3 "Project Description," Section 3.6. **Table 1-1** and **Table 1-2** provide a summary of the main components that comprise the Project, and that are evaluated in the SEIR.

TABLE 1-1
SUMMARY OF REMEDIATION AND MONITORING WELL BOREHOLES

Proposed Well Boreholes for the Final Remedy Design¹	Remediation Wells	Monitoring Wells	Total Wells
Known Project Components (Based on Final Remedy Design)			
Groundwater FEIR Limit	110	60	170
Installed Boreholes	2	16	18
Planned Boreholes to Be Installed	47	56	103
Future Provisional Boreholes that Might Be Installed	46	24	70
Total Boreholes Identified in the Final Remedy Design	95	96	191
Future Activity Allowance (Locations Unknown at this Time)			
25 Percent Potential Allowance	24	24	48
Additional Monitoring Well Boreholes	0	10	10
Totals			
Total SEIR Boreholes	119	130	249
Difference Between FEIR Limit and Total New SEIR Boreholes ³	7	54	61

NOTES:

1 Boreholes may have multiple wells installed within the same borehole

2 Remediation wells include injection and extraction wells

3 Difference equals Total SEIR Boreholes minus Groundwater FEIR Limit boreholes minus Installed Boreholes.

SOURCE: CH2M Hill 2015a.

TABLE 1-2
SUMMARY OF NON-WELL INFRASTRUCTURE

Infrastructure Component	Groundwater FEIR Estimate	Final Remedy Design	25 Percent Potential Allowance
Fluid Conveyance Piping and Trenches	50,000 linear feet	127,500 linear feet of piping in 43,200 linear feet of trenches	31,875 linear feet of piping in 10,800 linear feet of trenches
Electrical/Communications Conduits and Trenches	50,000 linear feet	124,000 linear feet of conduits in 43,200 linear feet of trenches	31,000 linear feet in the same 10,800 linear feet of trenches listed above
Natural Gas Pipeline at TCS Evaporation Pond	Not envisioned at that time	670 feet	None needed
Buildings and Structures	100,000 square feet	42,000 square feet	10,500 square feet
Roadway Improvements	6,000 linear feet	8,150 linear feet (new) and 4,060 linear feet (improvements to existing)	2,038 linear feet (new) and 1,015 linear feet (improvements to existing)

SOURCE: CH2M Hill 2015a.

1.2.5.1 Final Groundwater Remedy Schedule and Effort

The Final Groundwater Remedy Project is a long-term remediation effort anticipated to last over 50 years (approximately 30 years of active remediation followed by approximately 10 years of long term monitoring, and up to approximately 20 years of arsenic monitoring). Construction of the proposed Project is estimated occur over a 5-year period, following DTSC and DOI approval of the Final Remedy Design and C/RAWP, which is anticipated to occur in 2017. Construction would occur in two phases, one to construct the Riverbank Extraction Wells, NTH IRZ and infrastructure, and the second to construct the remaining systems (parts of the IRL, TCS Recirculation Loop, and injection of freshwater). Operation and maintenance would begin following the start-up of the various remedy systems, and would consist of approximately 30 years of active remediation followed by up to approximately 10 years of long-term monitoring and up to approximately 20 years of arsenic monitoring. Decommissioning and restoration would begin following the attainment of the cleanup objectives and/or the determination that the remedy facilities are no longer needed.

1.3 CEQA Environmental Review

The CEQA Guidelines Section 15160 provides for variations in EIRs so that environmental documentation can be tailored to different situations and intended uses, and these variations are not exclusive. As described below, this SEIR relies on a prior EIR, which was a project- and program-level EIR.

CEQA authorizes lead agencies to prepare a program-level or “first-tier” analysis for some approval of a series of actions that are related geographically or as part of a suite of activities (Pub. Resources Code Section 21094; 14 CCR Sections 15152, 15168). A program EIR is a type of EIR that allows a public agency to consider broad policy alternatives and program-wide

mitigation measures at the early stages of planning. By contrast, a project-level EIR typically involves specific project-related plans and a discretionary approval that may result in significant adverse environmental effects (14 CCR Sections 15168, 15161).

The Groundwater FEIR (DTSC 2011), which was certified on January 31, 2011 (SCH No. 2008051003), provided both a programmatic and, in certain instances, a project-level analysis for the conceptual technical methods selected for the final remedy that would remediate contaminated groundwater at the Station. The proposed final remedy was described in the *Final CMS/FS for Solid Waste Management Unit 1 (SWMU 1)/Area of Concern 1 (AOC 1) and AOC 10* (Final CMS/FS) as Alternative E—In Situ with Freshwater Flushing. The Groundwater FEIR provided a program-level analysis of the construction of physical facilities that would be necessary to implement the final remedy (Alternative E from the Final CMS/FS), which had not yet been developed to specific plans and designs. In 2011, DTSC adopted Alternative E after certifying the Groundwater FEIR. DTSC also adopted an Addendum to the Groundwater FEIR in 2013, which expanded the Project Area and considered the potential environmental effects of alternative well locations for a freshwater source (DTSC 2013).

The Final Remedy Design and related infrastructure needed to complete cleanup are geographically related to the area considered within the Groundwater FEIR, and involve consideration of the In Situ with Freshwater Flushing project. Although no specific site locations for remedial facilities were known at the time the Groundwater FEIR was prepared, the ultimate development of those facilities was recognized as the logical progression for cleanup. The Groundwater FEIR therefore included a mostly programmatic level of analysis to ensure that the effects of developing the final remedy, and implementation of the final remedy, were considered for purposes of: avoiding duplicative reconsideration of basic policy considerations, ensuring consideration of cumulative impacts, and to allow DTSC to consider broad policy alternatives and program-wide mitigation measures at an early time, while recognizing that the components are at different stages of planning. (See CEQA Guidelines, Section 15168, subd. (b).)

The Final SEIR tiers from the Groundwater FEIR and Addendum. The Final SEIR also evaluates, at a project level, the environmental effects associated with the construction, operation, and decommissioning of the Final Groundwater Remedy Project, based on the Final Remedy Design and as further described in the Project Description (See Final SEIR Volume 2, Chapter 3, “Project Description”), relative to the program-level impact analysis in the certified Groundwater FEIR. CEQA Guidelines Sections 15152, subdivision (f), 15168, subdivisions (c)-(d), and 15162, among others, provide that when an EIR has been certified for a project, a SEIR shall not be prepared unless the lead agency determines that one or more of the following has occurred:

1. Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified effects.
2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of

new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows the project would result in one or more significant effects not discussed in the prior EIR, or that significant effects previously identified may be substantially more severe.

(See also Pub. Resources Code, Sections 21094, 21166.)

DTSC has prepared a Modified Initial Study (Appendix IS to the Final SEIR) to provide an initial evaluation of Final Remedy Design as compared to the analysis conducted in the Groundwater FEIR (see CEQA Guidelines Section 15128). The purpose of the Modified Initial Study is to determine whether certain impacts of the Final Remedy Design were sufficiently covered in the Groundwater FEIR or otherwise do not require additional analysis, and whether the criteria set forth in CEQA Guidelines Section 15162 were triggered. DTSC determined that modifications and/or new levels of specificity contained within the Final Remedy Design, as compared to the Groundwater FEIR and Addendum, trigger the provisions above for requiring preparation of an SEIR. Specifically, the lead agency has determined that several aspects of the Final Remedy Design, including the following, have resulted in the need for the Final SEIR:

- Use of a freshwater source, Havasu National Wildlife Refuge (HNWR) Well 1A in Arizona as the source for freshwater, that contains levels of arsenic that are elevated above the State of California background levels.
- Inclusion of a new construction headquarters and soil processing/storage area near Moabi Regional Park, in an area that was anticipated to only provide one or more freshwater supply wells in the Groundwater FEIR.
- An overall increase in the total amount of ground disturbance associated with remedy construction and long-term operation. The Groundwater FEIR assumed a maximum of 13,400 cubic yards of soil disturbance. The Final Remedy Design anticipates 45,200 cubic yards of soil disturbance.
- The need to further evaluate potential impacts to cultural resources, specifically related to new information, regarding resources, that has become available since the Groundwater FEIR was prepared. This includes historic, archaeological, and Tribal resources.
- The need to further evaluate potential impacts to sensitive wildlife species based on new information that has become available since the Groundwater FEIR was prepared. This includes but is not limited to sensitive bat species and bighorn sheep.
- An overall increase in the amount of energy that would be used to operate the Final Remedy Design. The Groundwater FEIR estimated a demand of 1.6 million kilowatt hours (KWh) of electricity annually. The Final Remedy Design estimates a higher demand of electricity of up to 7.82 million KWh annually.

There may be a need for additional facilities and associated activities beyond the parameters set forth in the Final Remedy Design. A Future Activity Allowance has been included in the Project Description and the Final SEIR to ensure that a comprehensive environmental analysis is included should additional activities be warranted over the decades-long project implementation. More information can be found in the Project Description (see Final SEIR Volume 2, Section 3.6).

The Final Remedy Design is therefore a subsequent activity under the Groundwater FEIR. The Final SEIR for the Final Groundwater Remedy Project tiers from the prior analysis in accordance with the above cited Public Resources Code and CEQA Guidelines Sections. A Modified Initial Study has been prepared consistent with CEQA Guidelines in order to limit the content of the SEIR, or incorporate by reference, the content of the Groundwater FEIR on those topics that were previously covered and for which no additional analysis is necessary, and is included as Appendix IS to the Final SEIR. Consequently, the Modified Initial Study identifies which of the Final Remedy Design's effects were adequately examined in the Groundwater FEIR and which topics warrant more detailed environmental analysis. The SEIR therefore concentrates the environmental analysis on those topics identified in the Modified Initial Study with the potential to have either new significant effects or substantially more severe significant impacts than were previously identified in the Groundwater FEIR. The remaining environmental topics, as documented in the Modified Initial Study, were determined not to have new or more severe significant environmental effects than what was previously identified in the Groundwater FEIR, and these topics are therefore not analyzed in detail in this SEIR. (See *Mission Bay Alliance v. Office of Community Investment and Infrastructure* (2016) 6 Cal.App.5th 160.)

The impacts analysis contained in the Groundwater FEIR (including its Errata) and 2013 Addendum also serve as the baseline for certain resource areas, as explained in the Draft SEIR, and used for DTSC's consideration in the SEIR of the potential effects of the Final Remedy Design as required by CEQA. Although the general rule under CEQA is that the environmental setting in an EIR corresponds to physical conditions at the time the agency undertakes its analysis, the California Supreme Court has acknowledged that subsequent review under Section 21166 is an exception to this rule. (See *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 326 [acknowledging the "only limited CEQA review under Section 21166 and CEQA Guidelines Section 15162"]; see also *ibid.* at fn. 11 [citing (2010) 48 Cal.4th 310 (1999) 70 Cal.App.4th 238, 242-243; *Benton v. Board of Supervisors* (1991) 226 Cal.App.3d 1467, 1477-1484.]

Under these cases, the SEIR's analysis need not revisit those impacts already disclosed in the Groundwater FEIR and 2013 Addendum; rather, the impacts disclosed in the Groundwater FEIR, Errata, and 2013 Addendum become the "baseline" against which the impacts of the Final Remedy Design are measured. The focus is therefore on whether the refinements to the Project give rise to new, or substantially more severe, environmental impacts. (CEQA Guidelines, Sections 15162–15164.)

1.4 Environmental Review Process for the SEIR

DTSC prepared an SEIR for the Project in accordance with CEQA as described above. Prior to and throughout the SEIR process, DTSC conducted extensive public and stakeholder outreach to ensure that its decision makers and members of the public were informed about the potential for significant adverse effects on the environment from the Project, alternatives to the Project, and related activities. DTSC held multiple meetings with interested Native American Tribal members and the public to ensure their concerns were considered as part of the environmental review and decision-making process. This is all in addition to the outreach and comment/response efforts conducted as part of the multi-year Final Design development process described above.

As required by CEQA Guidelines Section 15375, a NOP is a notice sent by the lead agency to notify the responsible agencies, trustee agencies, the Office of Planning and Research, and involved federal agencies that the lead agency plans to prepare a Draft SEIR for the Project. The purpose of the notice is to solicit information, guidance, and recommendations regarding the scope, focus, and content of the Draft SEIR. A NOP was prepared for the proposed Project and is included as Appendix NOP to the SEIR (see Final SEIR Volume 2). The NOP identified the Project Area, described the need for and objectives of the Project, and identified the probable environmental effects of the Project. The NOP was circulated to responsible and trustee agencies, federal agencies, Native American Tribes, and interested members of the public. The NOP public comment period began on May 5, 2015, and concluded on June 4, 2015, providing a 32-day comment period.

Concurrent with the issuance of the NOP, two public scoping meetings were held during the public comment period. Agency and public scoping meetings were held on May 19 and 20, 2015, to receive oral comments on the scope and content of the SEIR. The meetings were open to the agencies mentioned earlier and to any interested organizations and individuals and Native American Tribes that have expressed interest in the potential effects of the proposed Project on cultural resources located on the Project Area.

In addition to the NOP scoping meetings, an extensive communication program was conducted with Native American Tribes that included formal meetings with Native American Tribal councils, informal meetings and field visits with cultural resources personnel and Native American Tribal representatives, and solicitation of written comments. This included a Tribal-focused Scoping Meeting on May 19, 2015. A Tribal outreach meeting was additionally held on October 5, 2015, and Tribes were afforded additional time to comment on the scope and content of the SEIR until March 11, 2016. Information obtained through the Tribal meetings and the subsequent communication program was incorporated into the SEIR.

In accordance with Section 15105 of the CEQA Guidelines requiring a minimum 45-day review period, a public review and comment period was provided for the SEIR for a 47-day public review period, beginning on January 12, 2017 through February 27, 2017. After specific requests were received from commenting parties for additional comment response time, DTSC agreed to accept, consider and respond to comments that were received after the close of the comment

period. Comments were received on March 6, 2017 without officially extending the draft SEIR comment period.

Two public meetings were held during the public review period to provide an opportunity for public comment. These meetings took place on January 31, 2017 in Needles, California, and February 1, 2017 in Golden Shores, Arizona. Transcripts of the comments received at these public hearings are included as part of the Final SEIR (see Final SEIR Volume 1, Chapter 4, “Individual Comments and Responses”).

The Final SEIR, including proposed responses to comments raised by public agencies and Interested Tribes who commented on the Draft SEIR, was distributed for a 30-day review period (December 22, 2017 to January 22, 2018), fulfilling the requirements of Section 15088 (b) of the CEQA Guidelines (PRC Section 21092.5).

1.5 General Findings

In accordance with CEQA Guidelines Section 15092, DTSC finds that the environmental effects of the Project either: (1) will not be significant; (2) will be mitigated to a less than significant level by the adopted mitigation measures; (3) have been substantially lessened or eliminated where feasible; or (4) cannot be feasibly mitigated to substantially reduce the significant and unavoidable impacts identified in the EIR but are acceptable due to overriding concerns (CEQA Guidelines Section 15093).

1.5.1 Certification of the SEIR

In accordance with CEQA, DTSC has considered the effects of the Project on the environment, as shown in the Draft SEIR and Final SEIR and the whole of the Record prior to taking action to approve the Project. DTSC released the Final SEIR for a 30-day circulation from December 22, 2017 to January 22, 2018 to commenting agencies and Interested Tribes pursuant to CEQA Guidelines Section 15088(b). Four comment letters were received following the close of the circulation period from the Metropolitan Water District of Southern California, the Fort Mojave Indian Tribe, the Cocopah Indian Tribe, and the Hualapai Indian Tribe. Additionally, DTSC met with the Fort Mojave Indian Tribe on January 17, 2018, January 30, 2018 and February 21, 2018. DTSC also held one meeting with the Interested tribes related to the Final SEIR following the close of the comment period, on January 30, 2018. Several minor revisions and clarifications were made to the Final SEIR as a result of these comment letters and tribal meetings, which are addressed in the Final SEIR Errata and Revisions and is now a part of the Final SEIR (February 2018). Included in these revisions was the voluntary inclusion of a fulltime instead of part-time project manager to the FMIT in Mitigation Measure CUL-1a-11.

DTSC has reviewed and considered the Draft SEIR and Final SEIR including errata and revisions and the information relating to the environmental impacts of the Project contained in those documents and has certified that the SEIR has been prepared and completed in compliance with CEQA. By these Findings, DTSC ratifies and adopts the conclusions of the Final SEIR as set

forth herein unless otherwise noted. The Final SEIR and these Findings represent the independent judgment and analysis of DTSC.

1.6 Findings Regarding Mitigation Measures

DTSC finds that the mitigation measures incorporated into and imposed upon the Project will not have any significant environmental impacts that were not analyzed in the EIR.

The Hualapai Indian Tribe (February 27, 2017) and Cocopah Indian Tribe (June 1, 2017) submitted comment letters on the Draft SEIR that included suggested mitigation measures that could further reduce the identified significant and unavoidable impacts to cultural resources, specifically impacts to the Topock TCP. DTSC held meetings with Interested Tribes on April 19 and 20, 2017, in Henderson, Nevada, to discuss their comments on the proposed mitigation measures prior to completion of response to comments and issuance of the Final SEIR. Additionally, DTSC conducted meetings with Interested Tribes between the Draft and Final SEIR (July 18 and August 15, 2017) to again discuss concerns regarding mitigation measures.

DTSC understands that the assessment of the appropriate amount and extent of mitigation has grown significantly since 2011 when the Groundwater FEIR was published and certified (January 2011). This increase is because of three distinct, but related, reasons: (1) there is a more thorough and documented understanding of the Topock Traditional Cultural Property (TCP) and what features are considered contributing elements as compared to when the Groundwater FEIR was certified; (2) the Project has been designed and developed more fully, including its inclusion of the Future Activity Allowance component; and (3) the physical impacts associated with the Project in conjunction with other cumulative projects will result in irreversible alteration and destruction of some features of the Topock TCP that convey its historical significance, which is integrally tied to the values, traditions, and belief systems of Tribes (see Final SEIR, Volume 1, Master Response 1 for further documentation). These factors result in an increase in the impacts to the Topock TCP as compared to what was projected by the Groundwater FEIR. While the Draft SEIR concluded significant and unavoidable cumulative impacts to the Topock TCP, as required by CEQA, DTSC carefully considered the suggested mitigation measures provided by the Tribes and determined that an additional new mitigation measure would further reduce the Project's cumulatively considerable contribution to the significant and unavoidable impact identified as CUM-2 in the Draft SEIR. In response, DTSC has included Mitigation Measure CUL-5 in the Final SEIR to further mitigate the impact to the extent feasible. After receipt of comments from FMIT on the Final SEIR, DTSC has included this Interested Tribe as a participant in CUL-5, as documented in the Errata and Revisions to the Final SEIR. Inclusion of the measure therefore does not reflect the identification of a new significant impact warranting the need for recirculation; it merely includes, in part, some of the additional mitigation measures requested by Tribes raised in comments on the Draft SEIR. **Table 1-3** summarizes each mitigation measure request and reasoning for acceptance or rejection by DTSC.

**TABLE 1-3
MITIGATION MEASURE REQUESTS MADE ON THE DRAFT SEIR**

Mitigation Measure Request	Reasoning for Rejection or Acceptance of Request
Hualapai Tribe	
Damaged cultural resources as a result of the proposed Project should be summed, and lost cultural resources should be compensated for the impact by replacing or providing substitute resources or environments; for example, an equivalent area of cultural preserve should be created nearby.	Feasible: DTSC has concluded—based on a comprehensive assessment of the resource (the Topock TCP), the specific environmental impacts (project and cumulative) of the Project as it relates to this historical resource, the Tribal considerations regarding feasibility, and the ability of additional mitigation to directly minimize significant adverse impacts to the physical environment—that additional mitigation shall be required as part of the Project. As a result, DTSC accepts the requested mitigation measures and has included a new Mitigation Measure CUL-5 in the Final SEIR, which would facilitate actions resulting in the preservation, interpretation, and/or educational programs related to the Topock TCP. The funds shall be used for the purposes of ensuring the preservation and transmission of cultural values associated with the Topock TCP, including furthering Tribal knowledge and community awareness of the TCP's importance and meaning for each Tribe (Chemehuevi, Cocopah, Colorado River Indian Tribe, and Hualapai). The funds shall be used to implement interpretive facilities or programs, land preservation, educational programs, grant funding for Topock-related research, or other similar uses that may be proposed by one or more of the four Tribes identified above. DTSC finds that the inclusion of this additional mitigation measure, while further reducing the overall cumulative impacts to the TCP in a manner acceptable under CEQA, by providing substitute resources through preservation, interpretation, and education, would reduce impacts to some degree but that the overall Project's contribution to this significant cumulative cultural impact would remain cumulatively considerable (significant and unavoidable).
Full university scholarships should be made available to tribal members to help create career paths towards continuing preservation work at Topock. These scholarships should be in the areas of archaeology, anthropology, hydrology, engineering and biology. Funding support for education and technical training for tribal members. In conjunction with all of the above, provide for full higher-education tribal scholarships (two per educational year per participating tribe) for biology and / or ethnobotanical degrees, archaeology, hydrogeology, and museum studies.	Infeasible: This suggested mitigation measure is found to lack a nexus and rough proportionality to the identified impacts of the Project to the Topock TCP. (See CEQA Guidelines, Section 15041.) The funding of education for members of the Tribe, while a benefit to the Tribe, would not directly mitigate any significant adverse impacts of the Project on the physical environment within the Topock TCP. As such, despite the worthy nature of the request, DTSC cannot legally impose such a requirement on PG&E. (See Pub. Resources Code, Section 21081.6, subd. (b) [agency must ensure mitigation is legally enforceable], 21004 [CEQA does not expand agency authority to impose condition]; CEQA Guidelines, § 15126.4, subd.(a)(2),(4) [same].)
Provide financial support for tribal interpretive centers on tribal lands that describe, educate, and engage tribal communities in disseminating and preserving traditional cultural identity through tribal languages. Provide support through grants and phased funding, for tribal interpretive facilities/museums, language programs, and healthy food systems. Resulting programs could then be components for continued outreach and education to stakeholder/agency staff with linking cultural information at Topock. Grants to be phased over life of the remediation project.	Feasible: DTSC has concluded—based on a comprehensive assessment of the resource (the Topock TCP), the specific environmental impacts (project and cumulative) of the Project as it relates to this historical resource, the Tribal considerations regarding feasibility, and the ability of additional mitigation to directly minimize significant adverse impacts to the physical environment—that additional mitigation shall be required as part of the Project. As a result, DTSC accepts the requested mitigation measure and has included a new Mitigation Measure CUL-5 in the Final SEIR, which would facilitate actions resulting in the preservation, interpretation, and/or educational programs related to the Topock TCP. The funds shall be used for the purposes of ensuring the preservation and transmission of cultural values associated with the Topock TCP, including furthering Tribal knowledge and community awareness of the TCP's importance and meaning for each Tribe (Chemehuevi, Cocopah, Colorado River Indian Tribe, and Hualapai). The funds shall be used to implement interpretive facilities or programs, land preservation, educational programs, grant funding for Topock-related research, or other similar uses that may be proposed by one or more of the four Tribes identified above. DTSC finds that the inclusion of this additional mitigation measure, while reducing the overall impacts in a manner acceptable under CEQA by providing substitute resources through preservation, interpretation, and education, would reduce impacts to some degree but that the

Mitigation Measure Request	Reasoning for Rejection or Acceptance of Request
	overall Project's contribution to this significant cumulative cultural impact would remain cumulatively considerable (significant and unavoidable).
Trust fund for a Cultural Preserve at Topock	Feasible: DTSC has concluded—based on a comprehensive assessment of the resource (the Topock TCP), the specific environmental impacts (project and cumulative) of the Project as it relates to this historical resource, the Tribal considerations regarding feasibility, and the ability of additional mitigation to directly minimize significant adverse impacts to the physical environment—that additional mitigation shall be required as part of the Project. As a result, DTSC accepts the requested mitigation measure and has included a new Mitigation Measure CUL-5 in the Final SEIR, which would facilitate actions resulting in the preservation, interpretation, and/or educational programs related to the Topock TCP. The funds shall be used for the purposes of ensuring the preservation and transmission of cultural values associated with the Topock TCP, including furthering Tribal knowledge and community awareness of the TCP's importance and meaning for each Tribe (Chemehuevi, Cocopah, Colorado River Indian Tribe, and Hualapai). The funds shall be used to implement interpretive facilities or programs, land preservation, educational programs, grant funding for Topock-related research, or other similar uses that may be proposed by one or more of the four Tribes identified above. DTSC finds that the inclusion of this additional mitigation measure, while reducing the overall impacts in a manner acceptable under CEQA by providing substitute resources through preservation, interpretation, and education, would reduce impacts to some degree but that the overall Project's contribution to this significant cumulative cultural impact would remain cumulatively considerable (significant and unavoidable).
Funding for increased security measures around the Topock Cultural Landscape.	Feasible: Mitigation Measure CUL-1a-3b from the Groundwater FEIR included development of a Site Security Plan. This mitigation measure has subsequently been completed and included as Appendix Q of the C/RAWP.
Cocopah Indian Tribe	
Funding to support cultural and language programs. Specifically, suggest using the Cocopah Cultural Arts and Language Program to promote cross cultural education through sharing of oral histories, shared ancestral language, food, songs, stories, migration and trade routes.	Feasible: DTSC has concluded—based on a comprehensive assessment of the resource (the Topock TCP), the specific environmental impacts (project and cumulative) of the Project as it relates to this historical resource, the Tribal considerations regarding feasibility, and the ability of additional mitigation to directly minimize significant adverse impacts to the physical environment—that additional mitigation shall be required as part of the Project. As a result, DTSC accepts the requested mitigation measure and has included a new Mitigation Measure CUL-5 in the Final SEIR, which would facilitate actions resulting in the preservation, interpretation, and/or educational programs related to the Topock TCP. The funds shall be used for the purposes of ensuring the preservation and transmission of cultural values associated with the Topock TCP, including furthering Tribal knowledge and community awareness of the TCP's importance and meaning for each Tribe (Chemehuevi, Cocopah, Colorado River Indian Tribe, and Hualapai). The funds shall be used to implement interpretive facilities or programs, land preservation, educational programs, grant funding for Topock-related research, or other similar uses that may be proposed by one or more of the four Tribes identified above. DTSC finds that the inclusion of this additional mitigation measure, while reducing the overall impacts in a manner acceptable under CEQA by providing substitute resources through preservation, interpretation, and education, would reduce impacts to some degree but that the overall Project's contribution to this significant cumulative cultural impact would remain cumulatively considerable (significant and unavoidable).
Funding to support continued restoration of the Limitrophe region of the Colorado River corridor.	Infeasible: DTSC asserts that the Project includes, inherent in its design and associated mitigation measures, the restoration of the Project Area to preconstruction conditions (see Final SEIR, Volume 2, Section 3.7.5; Mitigation Measure BIO-1a; Mitigation Measure BIO-1b; Mitigation Measure Bio-2h; Mitigation Measure CUL-1a-8q (Section 2.5 of the CIMP); Mitigation Measure CUL-1a-16). DTSC finds, however, that requiring restoration of the Limitrophe region of the Colorado River corridor lacks a nexus and rough proportionality to the identified impacts of the Project and therefore declines to adopt the suggestion. (See CEQA Guidelines, Sections 15041, 15126.4, subd. (a)(4), See also Pub. Resources Code, Sections 21081.6, subd. (b) [agency must ensure mitigation is legally enforceable], 21004 [CEQA does not expand agency authority to impose condition].) There is, moreover, no evidence in the record to support the contention that that the Project will result in a direct significant impact to the Limitrophe region of the Colorado River corridor. It should be noted, however, that

Mitigation Measure Request	Reasoning for Rejection or Acceptance of Request
	new Mitigation Measure CUL-5 applies to the Cocopah Indian Tribe, and as such, mitigation funding could be used by the Cocopah Indian Tribe to implement interpretive facilities or programs, land preservation, educational programs, grant funding for Topock-related research, or other similar uses that may be proposed by the Cocopah Indian Tribe.

1.7 Findings of Fact

DTSC has reviewed, and certified as adequate, the Final SEIR for the Final Groundwater Remedy Project, which consists of the following: (1) a revised version of the Draft SEIR incorporating changes made by the lead agency and provided as Volume 2; (2) comments and recommendations received on the Draft SEIR verbatim provided in Volume 1; (3) a list of persons, organizations, and public agencies commenting on the Draft SEIR provided in Volume 1; (4) responses of the lead agency to significant environmental points raised in the review and commenting process for the Draft SEIR found in Volume 1; (5) comments received on the Final SEIR and the resulting Errata and Revisions; and (6) the MMRP.

For each significant effect identified in the SEIR, DTSC must make one or more of the Findings listed in Public Resources Code Section 21081 and CEQA Guidelines Section 15091 (see Section 1.1.1).

DTSC hereby makes the following Findings regarding the significant adverse effects of the Project, pursuant to Public Resources Code Section 21081 and Section 15091 of the CEQA Guidelines.

1.7.1 Findings Regarding Environmental Effects Found Not to Be Significant

Effects of the Project that are found to be less than significant, and that require no mitigation, are identified in the bulleted list below. The impact title follows the impact title conventions used in the Draft SEIR and Final SEIR. DTSC has reviewed the Record (see Section 1.1.2) and, based on the technical and professional information presented, agrees with the conclusion that the following impacts would not be significant adverse impacts under the Project, despite the contrary opinions of some commenters, and therefore no additional Findings are needed.

- Aesthetics (Substantial Light and Glare, Section 4.1) – The Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. This impact would be less than significant. No mitigation is required.
- Air Quality (Potential to Generate Emissions of Criteria Air Pollutants, Section 4.2) – The Project would not violate Mojave Desert Air Quality Management District (MDAQMD) air quality standards for particulate matter (PM₁₀) or other criteria pollutants other than NO_x during construction activities. This impact would be less than significant. No mitigation is required.

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- Air Quality (Long-term Operational-Related [Regional] Emissions Criteria Pollutants and Precursors, Section 4.2) – The Project would not violate the MDAQMD air quality standards for any criteria pollutant during operational activities. This impact would be less than significant. No mitigation is required.
 - Air Quality (Long-term [Regional Emissions of Greenhouse Gases], Section 4.2) – The Project would not generate greenhouse gas emissions that would have a significant impact on the environment during construction or operation, nor would it conflict with applicable plans, policies, or regulations adopted for the purposes of reducing Greenhouse Gas emissions. This impact would be less than significant. No mitigation is required.
 - Air Quality (Potential to Result in a Cumulatively Considerable Net Increase), Section 4.2) – The Project would not result in a cumulative considerable net increase in any criteria pollutant emissions other than NO_x. This impact would be less than significant. No mitigation is required.
 - Air Quality (Long-Term Operations Related to [Local] CO Emissions, Section 4.2) – The Project would not expose sensitive receptors to substantial pollutant concentrations during long-term operational activities. This impact would be less than significant. No mitigation is required.
 - Air Quality (Short-Term Construction-Related and Long-Term Operational-Related Emissions of Toxic Air Contaminants, Section 4.2) – The Project would not expose sensitive receptors to substantial Toxic Air Contaminant pollutant concentrations. This impact would be less than significant. No mitigation is required.
 - Geology, Soils and Seismicity (Soil Erosion or Loss of Top Soil, Appendix IS) – The Project could result in localized erosion which could lead to the degradation of on-site soils and nearby waterways, including the Colorado River. Existing sources of contamination could also be eroded, which could contribute contaminants to receiving waters. Activities associated with the Project could result in substantial wearing of Project Area roadways, which could lead to changes to the drainage patterns, rutting, and locally greater erosion rates. Further, where utilities and water conveyance structures would be installed underground, the recompacted soils may cause changes to the existing drainage of the area and may prevent the infiltration of water in these areas. Mitigation Measures GEO-1 and GEO-1b would be implemented to reduce the impacts to a less than significant level.
 - Noise (Long-Term Operational-Related Non –Transportation Noise and Vibration Impacts, Section 4.7) – Operation-related non-transportation noise sources involve activities such as water filtration pumps, generators, off-road mobile sources such as forklifts, etc. This equipment would not expose sensitive receptors to noise levels in excess of the applicable noise standards and/or result in a substantial increase in ambient noise levels. This impact would be less than significant. No mitigation is required.
 - Noise (Long-Term Operational-Related Transportation Noise Impacts, Section 4.7) – Operation of the Project would not result in any transportation noise sources (material/equipment delivery, truck trips for off-site waste disposal, etc.) that would generate noise levels that would result in a noticeable, permanent increase in ambient noise levels at

nearby sensitive receptors or vibration impacts in excess of applicable levels. This impact would be less than significant. No mitigation is required.

- Utilities, Service Systems and Energy (Potential to Exceed Wastewater Treatment Requirements or Require a New Wastewater Facility, Section 4.8) – The Project includes several wastewater improvements in order to operate successfully that would not exceed requirements or require new facilities. This impact would be less than significant. No mitigation is required.
- Utilities, Service Systems and Energy (Potential to Exceed Landfill Capacity, Section 4.8) – The Project would generate incidental non-hazardous waste and hazardous waste during construction and operation activities, which would not exceed the available daily capacity of relevant landfills. This impact would be less than significant. No mitigation is required.
- Utilities, Service Systems and Energy (Result in wasteful, inefficient, or unnecessary consumption of energy, during Project construction or operation or did not incorporate renewable energy or energy efficiency measures into building design, equipment use, transportation or other Project features, Section 4.8) – The Project would consume energy, including electricity, natural gas, and fuels during Project construction, operation and maintenance, and decommissioning activities, which would not result in wasteful, inefficient, or unnecessary consumption of energy. This impact would be less than significant. No mitigation is required.
- Water Supply (Increased Demand for Water Supplies, Section 4.9) – Although the Project would require the use of freshwater supplies from certain Arizona wells for injection upgradient of the Cr(VI) contaminant plume as well as for use during construction activities, the Project would not substantially increase overall demand for water supplies and the overall net consumptive use would be minimal. This impact would be less than significant. No mitigation is required.

DTSC prepared a Modified Initial Study on the Groundwater Remedy Project, based on CEQA Guidelines Appendix G, which is included in the Final SEIR (Appendix IS). The Modified Initial Study identifies which of the Project's effects were adequately examined in the Groundwater FEIR and which topics warrant more detailed environmental analysis. The SEIR concentrates the environmental analysis on those topics identified in the Modified Initial Study with the potential to have either new significant effects or substantially more severe significant impacts than were previously identified in the Groundwater FEIR, or those areas for which substantially modified or new mitigation measures have been provided.

Based on the scope and nature of the Project, and as identified in the Modified Initial Study, it was determined that several resource areas do not warrant a detailed analysis in the SEIR. These issue areas include: Agriculture, Geology and Soils, Land Use and Planning, Minerals, Population and Housing, Public Services, Recreation, and Transportation and Traffic. DTSC determined, based on completion of the Modified Initial Study checklist, that there is no potential for these resource topics to have new significant environmental effects or substantially more severe

significant effects that were previously identified in the Groundwater FEIR. As a result, these resource areas are not included in the Findings for this Final SEIR.

1.7.2 Findings Regarding Significant Effects of the Project

The SEIR identified a number of significant environmental effects (or impacts) that the Project would cause or to which it would contribute. Some of these significant effects can be avoided or reduced to a less-than-significant level through the adoption of feasible mitigation measures. Other effects are significant and unavoidable. Some of these unavoidable significant effects can be substantially lessened by the adoption of feasible mitigation measures. Other significant, unavoidable effects cannot be substantially lessened. For reasons set forth in the Statement of Overriding Considerations in Section 1.9 of this document, however, DTSC has determined that overriding economic, social, and other considerations outweigh the significant and unavoidable effects of the Project.

DTSC has reviewed the Record and has determined that some of the Project impacts would remain significant after implementation of all feasible mitigation, and therefore require Findings pursuant to Public Resources Code Section 21081 and CEQA Guidelines Section 15091. DTSC's Findings with respect to the Project's significant effects and mitigation measures are set forth in the table attached to these Findings as **Attachment 1** at the end of this document. This table does not describe the full analysis of each environmental impact contained in the SEIR. Instead, the table provides a summary description of each impact, describes the applicable mitigation measures adopted by DTSC, and states DTSC's Finding for each impact. A full explanation of the environmental impacts can be found in the Final SEIR. In making these Findings, DTSC incorporates the analysis and explanation in the Final SEIR in these Findings, except to the extent any such determinations and conclusions are specifically and expressly modified.

1.7.3 Growth Inducement

CEQA requires that an EIR must discuss ways in which the project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding area (CEQA Guidelines, Section 15126.2[d]). Induced growth is any growth that exceeds planned growth and results from new development that would not have taken place in the absence of a project. A project can be determined to have a growth-inducing impact if it directly or indirectly causes economic or population expansion through the removal of obstacles to growth or encourages or facilitates other activities that could significantly affect the environment; actions that are sometimes referred to as "growth accommodating."

The proposed Project would implement remediation efforts to clean up contaminated groundwater. Construction and treatment system start-up activities for the Final Groundwater Remedy Project would occur for approximately 5 years, including construction closeout. Operation and maintenance would begin following the start-up of the various remedy systems, and would consist of approximately 30 years of active remediation followed by up to approximately 10 years of long-term monitoring and up to approximately 20 years of arsenic monitoring. During the construction phase, project mobilization would require approximately 80 workers in the Project Area for an estimated period of 4 months. Phase 1, lasting 19 months, and

Phase 2, lasting 12 months, would require approximately 168 and 181 workers, respectively. Four technicians, four instrumentation specialists, and engineers would also be present during these two phases for functional testing.

Operation and maintenance of the groundwater remedy would require approximately 11 full-time employees or full-time equivalents for routine operation and maintenance of the groundwater remedy throughout the life of the Project, including two site managers and three groundwater monitors. Non-routine operation and maintenance activities would require a maximum of eight full-time equivalents for well rehabilitation and other non-routine activities such as well repairs and replacement. Decommissioning and removal of the IM-3 Facility and the Final Groundwater Remedy Project would require approximately 33 and 69 workers for a total of 15 and 12 months, respectively.

These activities associated with the proposed Project would not result in the need for the development of new residences on or within the larger vicinity of the Project Area. The anticipated employment, both direct and indirect, generated by the proposed Project is presented in the Final SEIR, Volume 2, Chapter 3, "Project Description." It is anticipated that workers would commute to the Project Area from surrounding counties, including San Bernardino County and counties in Arizona, where sufficient housing stock is available. As such, no new residents would be required to construct the proposed Project. No new residents are anticipated as a result of the activities associated with the proposed Project, so no direct growth inducement would occur as a result.

The Project Area is currently served by existing roadways, utilities, and public services. While there is the chance that the proposed Project could result in the development of infrastructure related to Project electrical and water supply systems or roadway modifications, these would only serve the Project and would be almost entirely decommissioned and removed after Project completion. Additionally, due to the relatively isolated nature of the area, other limiting factors to development, and the projected growth forecasts, this additional electrical and water supply would not result in substantial indirect growth. For these reasons, implementation of the proposed Project would not result in direct or indirect environmental effects related to additional growth (see Final SEIR Volume 2, pages 5-12 through 5-13).

1.7.4 Significant Irreversible Environmental Effects

Section 21100(b)(2)(b) of the Public Resources Code and Section 15126.2(c) of the CEQA Guidelines require that an EIR analyze the extent to which a project's primary and secondary effects would affect the environment and commit nonrenewable resources to uses that future generations would not be able to reverse. "Significant irreversible environmental changes" include the use of nonrenewable natural resources during the initial and continued phases of the project, should this use result in the unavailability of these resources in the future. Primary impacts and, particularly, secondary impacts generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with projects. Irretrievable commitments of these resources are required to be evaluated in an EIR to ensure that such consumption is justified (CEQA Guidelines Section 15126.2[c]).

Per Section 15126.2(c) of the CEQA Guidelines, a project would result in an irreversible and irretrievable commitment of resources if it:

- Involved a large commitment of nonrenewable resources;
- Created primary and secondary impacts that would generally commit future generations to similar uses;
- Involved uses in which irreversible damage would result from any potential environmental accidents associated with the project; or
- Proposed consumption of resources that were not justified (e.g., the project involves the wasteful use of energy).

The Final Groundwater Remedy Project is a long-term remediation project, which is anticipated to last over 50 years. The Final Groundwater Remedy Project's active construction phase would occur for approximately 5 years, followed by approximately 30 years of active remediation, 10 years of long-term monitoring, and up to approximately 20 years of arsenic monitoring. Over the approximate 50-year lifetime of the Project, nonrenewable resources would be used, as explained in the Final SEIR, Volume 2, Chapter 3, Section 4.8, "Utilities, Service Systems, and Energy." Temporary increases in energy consumption would occur during Project construction, operation and maintenance, and decommissioning. These would include the use of nonrenewable resources such as electricity, gasoline, diesel fuel, and oil for equipment and transportation vehicles.

Specifically, the proposed Project is anticipated to use an annual average of 149,283 gallons of diesel and 20,468 gallons of gasoline during the 5-year construction period, including the Future Activity Allowance. This is 0.0057 percent of the State's usage in 2012 for diesel and 0.001 percent for gasoline. During operational activities, the proposed Project is anticipated to use 55,649 gallons of diesel and 46,705 gallons of gasoline annually. This is 0.0021 percent of the State's usage in 2012 for diesel and 0.0003 percent for gasoline. Decommissioning is anticipated to use the same amount of nonrenewable resources as construction.

Operation and maintenance would require up to 7.82 million kWh annually of electricity, most of which would be powered by on-site generators and solar panels (5.2 million kWh/hour annually). Operation of the proposed Project would also include a Future Activity Allowance, which could potentially increase the amount of electricity required for the Project. The Future Activity Allowance is anticipated to require up to 2.37 million kWh annual as a worst case scenario with 1.96 million kWh annually coming from the City of Needles and 0.41 million kWh annually coming from the Mojave Electric Cooperative. This additional electrical usage would be approximately 3.74 percent of the utility's 52.46 million kWh for the City of Needles and approximately 0.04 percent for of the 929 million kWh for the Mojave Electric Cooperative. As a result, the Project's commitment of nonrenewable resources would be offset by renewable resources like solar power, and would be within the current regional supply, and would not represent a large irreversible commitment of resources.

The consumption and use of nonrenewable resources, as contemplated in CEQA Guidelines Section 15126.2, subdivision (c), is not considered irreversible, since resources are justified to

ensure protection of the environment through remediation of the contaminated groundwater plume. The Project does not commit substantial amounts of resources compared to existing annual allotments, and the amount of energy and equipment to be used is limited to that needed for the remedy, so there is no irreversible commitment of nonrenewable resources or related significant impact (Final SEIR, Volume 2, page 5-11).

1.8 Findings Regarding Alternatives to the Project

An EIR must “describe a range of reasonable alternatives to the project . . . which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives” (CEQA Guidelines, Section 15126.6, subd. (a)). Although an EIR must evaluate a reasonable range of potentially feasible alternatives, it is up to the agency decision-making body to ultimately determine whether a potentially feasible alternative is actually infeasible (*California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 999). Grounds for such a conclusion might be the failure of an alternative to satisfy a basic fundamental project objective, or objectives deemed important by the agency decision makers, or the fact that an alternative fails to promote policy objectives of concern to such decision makers (*Id.* at pages 992, 1000–1003). Thus, even if a project alternative will avoid or substantially lessen any of the significant environmental effects of a proposed project as mitigated, the decision makers may reject the alternative for such reasons, including “desirability.”

Under CEQA Guidelines Section 15126.6, the alternatives to be discussed in detail in an EIR should be able to “feasibly attain most of the basic objectives of the project[.]” For this reason, the objectives described in the Draft SEIR (see Final SEIR Volume 2, Section 3.4) and in Section 1.2.3 of these Findings provided the framework for defining possible alternatives. The selection of alternatives took into account the project objectives, and primary consideration was given to alternatives that would reduce any of the Project’s significant impacts while still meeting most of the project objectives.

As described in the Final SEIR Volume 2, Section 3.4, the objectives of the proposed Project, reiterated below, are consistent with the objectives of the Groundwater FEIR certified in 2011. These objectives were used in the identification and selection of alternatives. As noted above, an EIR need only consider alternatives that would feasibly accomplish most of the Project’s basic objectives.

The following are the Project RAOs for groundwater:

- Reduce the mass of total chromium (Cr[T]) and Cr(VI) in groundwater at the Project Area to achieve compliance with the applicable or relevant and appropriate requirements,⁴ which will

⁴ CERCLA Section 121 requires cleanups to meet ARARs: any “legally applicable or relevant and appropriate standard, requirement, criteria or limitation” that has been promulgated under federal or state environmental laws. The ARARs include such things as the federal and state “Safe Drinking Water Act” and the Solid Waste Control Act’s land disposal restrictions.

be achieved through the cleanup goal of the regional background concentration of 32 µg/L of Cr(VI).

- Ensure that the geographic location of the target remediation area (contaminated groundwater plume) does not permanently expand following completion of the final remedy.
- Prevent ingestion of groundwater as a potable water source having Cr(VI) in excess of the regional background concentration of 32 micrograms per liter (µg/L).
- Prevent or minimize migration of Cr(T) and Cr(VI) in groundwater to ensure concentrations in surface water do not exceed water quality standards that support the designated beneficial uses of the Colorado River (11 µg/L Cr[VI]).

In addition to the objectives stated above, the following objectives were defined by DTSC pursuant to CEQA Guidelines Section 15124(b):

- Provide consistency with the Remedial Design/Remedial Action Consent Decree between PG&E and the United States which was approved by the U.S. District Court for the Central District of California (November, 2013), the DOI/DTSC Memorandum of Understanding concerning the coordination in overseeing the implementation of the groundwater response action (November 22, 2011), and any other legal agreements applicable to the Project, including the 2006 and 2012 Settlement Agreements entered into between DTSC and the Fort Mojave Indian Tribe (FMIT).
- Achieve the cleanup levels or performance goals delineated in the DTSC's Statement of Basis and the DOI's Record of Decision for the final groundwater remedy.
- Protect biological, historical, and cultural resources by minimizing ground disturbance to the extent feasible.
- Minimize aesthetic impact to the extent feasible by limiting the amount of aboveground infrastructure.
- Consider public safety, ensuring efficiency, compliance with health and safety standards.
- Ensure remedy achieves compliance with RAO's within a reasonable time frame as required by California State Water Resources Control Board Resolution No. 92-49.

As such, the range of alternatives considered in the SEIR was made up of three alternatives to the proposed Project that feasibly attain most of the basic objectives of the Project. These criteria and other factors, expressed in the SEIR, resulted in the determination that the alternatives considered represented a reasonable range (for further information concerning project alternative selection, see the Final SEIR Volume 2, Section 7.3). The alternatives considered in the SEIR are presented and summarized in the following pages. In addition, the feasibility of each of the alternatives evaluated in the SEIR is determined in the following pages.

1.8.1 Alternatives Considered but Not Analyzed in Detail

As described in the Final SEIR, Volume 2, Section 7.3, the proposed Project is the outcome of a multi-year collaboration between DTSC, as the lead agency, PG&E, DOI, Interested Tribes, landowners, and other stakeholders. This multi-year collaborative process has allowed DTSC to foster meaningful Tribal and stakeholder participation and informed decision making throughout the development of the Project, resulting in continuous refinement of the Project to avoid or lessen impacts, while also addressing many of the concerns of stakeholders, Tribal, and trustee and responsible agencies. The alternatives analysis contained in the Final SEIR is therefore focused on specifically reducing the identified significant environmental impacts of the Project (per the intent of CEQA), and does not revisit the alternatives previously considered in the 2011 EIR or those suggested during the Project's design phase which are not potentially feasible or which would involve substantially redesigning the Project. Given that and according to Section 15126.6(c) of the CEQA Guidelines, which states that an EIR identify any alternatives that were considered by the lead agency but rejected as infeasible, this section provides a discussion of four alternatives initially considered for evaluation and explains the reasons for rejecting these alternatives from further consideration.

1.8.1.1 Alternative Remedial Technology

Nine alternative remedial technologies were evaluated in the Groundwater FEIR following DTSC's review and participation in the Final CMS/FS process. The remedy selection and design process provided an exhaustive consideration of all potential options and technologies for remediation of the contaminated groundwater plume while meeting the RAOs and other requirements, including the applicable statutory requirements of RCRA/CERCLA and the associated Corrective Action Consent and Administrative Consent Agreements for Topock. For a list and discussion of the alternative remedial technologies, see the Final SEIR, Volume 2, Section 7.5.1.

After thorough consideration through the CMS/FS and Groundwater FEIR process, DTSC selected Alternative E – In Situ Treatment with Freshwater Flushing because it would achieve the RAOs while substantially reducing, through chemical change and physical precipitation, the amount of Cr(VI) in the groundwater (which is the principal threat in groundwater at the site). The selected technology (now the proposed Project) was determined to complete cleanup in a reasonable time frame while achieving best balance with the adverse effects to cultural resources and biological resources than other alternatives considered. Furthermore, Alternative E met both the threshold criteria of (1) protecting human health and the environment, attaining media cleanup goals (over a reasonable timeframe), and controlling sources of releases, and (2) compliance with the identified chemical-, location-, and action-specific ARARs.

The other alternative remedial technologies were rejected for the following reasons for either their inability to meet the basic project objectives or for their feasibility.

Project Objectives. Although the other alternative remedial technologies would meet most of the project objectives, including the reduction of the mass of Cr(T) and Cr(VI) in groundwater at the

Project Area, the alternatives were determined to result in greater ground disturbance or result in longer cleanup timeframes.

Feasibility. Since the certified Groundwater FEIR included the evaluation of several alternative remedial technologies, which were deemed either as not feasible, not meeting project objectives, or resulting in greater impacts than the proposed Project, alternative remedial technologies were rejected from further analysis in the SEIR.

Given the thorough investigation and evaluation of other potential remedial alternatives through the development of the certified Groundwater FEIR, the CMS/FS, and the joint decision between DTSC and DOI in 2011 to select Alternative E – In Situ with Freshwater Flushing, for which the CEQA statute of limitations has run and all prior litigation has been settled, it is not necessary for the Final Groundwater Remedy SEIR to consider or revisit other remedial technologies as viable alternatives to the proposed Project.

1.8.1.2 Colorado River Freshwater Source Alternative

The Groundwater FEIR evaluated three separate options for a freshwater supply source including the use of surface water from the Colorado River. Based on the Final CMS/FS evaluation, this option would obtain water from the Colorado River and would have sufficient capacity and low concentrations of arsenic and dissolved salts. The use of Colorado River water could be done either by taking water directly from the river through an intake structure on the river bank, or by extracting water from beneath the river bottom through an infiltration gallery.

Water drawn directly from the river via an intake structure would likely require filtration and disinfection prior to injection into the aquifer, which would require filters and chemical feed equipment that would increase the size and amount of remedial infrastructure to be constructed and maintained. Organic carbon would potentially need to be removed from the river water prior to injection, which is difficult to remove using conventional water treatment methods. The additional construction footprint needed for the direct river intake infrastructure would also disturb a larger area than would the Project.

Use of a shallow infiltration gallery beneath the river bottom would avoid the need for filtration and disinfection of water from a direct river intake. Under this option, the sand in the river bottom would provide filtration, removing suspended solids and microbes. However, the groundwater in the shallow zone beneath the river contains water that is geochemically reduced and contains elevated concentrations of iron and manganese, which could foul the injection wells. It is also likely that a conditioning system would be needed, at least during the first few years, to remove iron and manganese from groundwater that is extracted from more reduced portions of the aquifer beneath the river such that the potential for fouling of the associated injection wells is minimized.

Project Objectives. Although most of the objectives of the Project would be met by this alternative, greater biological resource impacts are associated with this option due to the implementation and operation of the river intake structure/shallow infiltration gallery and potential direct impacts to special status fish species that occur in the Topock area, specifically

the razorback sucker and the bonytail chub. Both are federally-listed and state-listed as endangered species; the razorback sucker is also a California Fully Protected Species. The CDFW indicated that approval of a fish screen and intake structure that would avoid incidental take of the razorback sucker may be difficult to obtain. Additional infrastructure impacts would also occur with the construction of necessary water treatment facilities to remove suspended solids, potentially organic carbon, and disinfection to remove microbes required prior to injection to protect wells.

Feasibility. Because this Colorado River Freshwater Source alternative would result in new and more severe significant impacts to aquatic resources, and there is uncertainty of the treatment effectiveness, this alternative was rejected for not being potentially feasible and therefore warranting of a full alternative analysis in the SEIR.

1.8.1.3 Elimination of Project Components in the Moabi Regional Park Area

The proposed Project includes a Construction Headquarters and Long-Term Remedy Support Area, Temporary Construction Laydown Area, and Soil Processing Area/Clean Soil Storage Area near Moabi Regional Park that were not considered in the Groundwater FEIR. These facilities would be located in areas that were identified in the Groundwater FEIR as a potential location for one or more freshwater wells to be used in the remedy; however, the location for the proposed facilities represents a larger area, which required the SEIR Project Area to be increased.

This alternative would require: (1) eliminating soil storage on-site and exporting all or a significant majority of excavated materials off-site, and (2) relocating the Construction Headquarters and Long-Term Remedy Support Area and laydown areas to another location. The only potential location identified in the Project Area for the Construction Headquarters and Long-Term Remedy Support Area would be the Transwestern Bench (TW Bench), as was shown in the 60% BOD. However, PG&E has indicated that there is not enough room at the TW Bench to accommodate the current needs for the Headquarters and Long-Term Remedy Support Area and laydown areas. As a result, the Construction Headquarters and Long-Term Remedy Support Area would need to be located off-site.

Project Objectives. The objectives of the Project would mostly be met by this alternative. One of the project objectives is to “consider public safety” and to “ensure efficiency,” which would not be met if the main Construction Headquarters and Long-Term Remedy Support Area were to be located farther from the Project activities, which would require longer worker trips, increased potential for hazardous material spills, and increased construction duration, etc. In addition, locating the Construction Headquarters and Long-Term Remedy Support Area near the TW Bench would increase visual impacts, and potentially biological resource impacts, in the Colorado River floodplain.

Feasibility. Because of the geographic site constraints and engineering infeasibility of including the Construction Headquarters and Long-Term Remedy Support Area at the TW Bench, and increased aesthetic and biological resource impacts, this alternative was rejected from further consideration in the SEIR.

1.8.1.4 Reduction of Project Footprint and Project Components

The Final Remedy Design evaluated in this SEIR is a culmination of an extensive preliminary (30%), intermediate (60%), pre-final (90%), and final (100%) design process, undertaken by PG&E as directed by DTSC and DOI with review and comment by stakeholders. For a summary of the design submittals, and summary of number of comments received and review time, refer to Chapter 2, “Introduction” of this SEIR, Subsection 2.4.6. Each subsequent design submittal went through extensive revision after stakeholder review. This substantive process allowed for consideration of many different remedy design components and compositions of infrastructure. The Final Remedy Design reflects the extensive design review process undertaken over four years by PG&E and stakeholders, and includes modifications and clarifications by PG&E as a result of the collaborative and iterative design process.

This alternative considers reduction of the Project footprint and associated pipelines, wells and appurtenant facilities to be installed and operated. This alternative would result in less ground disturbance and fewer facilities. However, based on the extensive design review process which identified the exact amount of infrastructure needed to operate the groundwater remedy properly and successfully, it is not guaranteed that this alternative would include enough infrastructure to successfully manage the groundwater plume.

Project Objectives. It is assumed that this alternative would not meet most of the Project objectives, since the type and amount of remedial components included in the Final Remedy Design was based on multiple design iterations and is assumed to include the exact amount of infrastructure required to operate the remedy successfully. For example, it is assumed that any reduction of wells may not guarantee that the contaminated groundwater plume does not permanently expand. Further, the proposed Project evaluated in this SEIR includes a Future Activity Allowance to allow for instances where the infrastructure identified in the Final Remedy Design is not enough to operate the groundwater remedy successfully over time. Because this alternative would not definitively meet all of the project objectives, this alternative was rejected from further consideration in the SEIR.

Feasibility. This alternative would involve reduction of the Project footprint, and associated pipelines, wells and appurtenant facilities to be installed and operated. Accordingly, this alternative would result in less ground disturbance and fewer facilities, which would generally result in fewer impacts than the proposed Project presented in the Final Remedy Design. However, because the alternative would not meet all of the project objectives, and may not result in successful operation of the groundwater remedy, this alternative was rejected from further consideration in the SEIR.

1.8.2 Aboveground Pipeline Infrastructure Alternative

1.8.2.1 Summary of Aboveground Pipeline Infrastructure Alternative

The proposed Project includes an extensive network of fluid conveyance pipelines to implement the remediation system, the vast majority of which would be located underground in subsurface trenches. The Aboveground Pipeline Infrastructure Alternative would place piping aboveground

in three upland segments east and west of the IM-3 Facility, instead of belowground. The preference for aboveground pipelines was presented to DTSC and DOI from Interested Tribes who explained that further subterranean intrusion into the land resulting from belowground pipelines was objectionable. Accordingly, the intent of this alternative is to reduce the amount of overall ground disturbance and subsurface excavation. The Final Remedy Design includes approximately 43,200 linear feet of trenches for fluid conveyance piping (about 8.2 miles) with most of the conveyance piping placed belowground in trenches. The Aboveground Pipeline Infrastructure Alternative would include the same pipeline alignments as the Proposed Project, except that 4,800 linear feet of aboveground fluid conveyance piping which requires 800 linear feet of underground trenching (less than 1 mile) would be installed. This would reduce underground trenching by 1,869 linear feet. In addition, the Aboveground Pipeline Alternative would result in 1,869 cubic yards of soil disturbance (excavation), which is substantially less than the proposed Project disturbance of 56,500 cubic yards. All other wells/boreholes, and Project infrastructure would be located in the same locations as described in the proposed Project.

The Aboveground Pipeline Infrastructure Alternative would reduce or have similar impacts to the following Project impacts as described in the Final SEIR. Under some topics, the Aboveground Pipeline Infrastructure Alternative would reduce but not eliminate the Project's significant and unavoidable impacts to cultural resources as described below.

- **Air Quality.** The Aboveground Pipeline Alternative would use similar types of mechanical equipment as the proposed Project at all phases. Because this alternative would result in less soil excavation, haul trips for soil import/export construction activities would be less than the proposed Project. Therefore, the daily and annual air pollutant emissions associated with the proposed Project would be less than the proposed Project. Air quality impacts for the proposed Project were determined to be less than significant with mitigation, and under this alternative, emissions would be reduced from those of the proposed Project during construction. Due to increased operation and maintenance requirements of the aboveground pipeline system, there would likely be increased vehicle trips to and from the Project Area resulting in increased emissions (though still anticipated to be below thresholds). Overall, this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project in regard to air quality.
- **Biological Resources.** Placement of aboveground pipelines in this alternative would occur primarily in previously disturbed roads and open creosote bush scrub community. The reduction in soil excavation would likely minimize habitat loss and potentially reduce impacts to upland habitat, riparian vegetation at the Bat Cave Wash crossing, and impacts to nesting birds. The Project Area contains suitable bat maternity roosting areas for a number of common and special-status bat species. While the decrease in soil excavation activity associated with the installation of aboveground structures may reduce impacts to the bat maternity roosts, potentially significant impacts to bat species may still occur given that construction of the aboveground structures would still result in increased noise and human activity around maternity roost sites.

The proposed Project was determined to not have a significant impact on wildlife movement corridors or linkages. However, the Aboveground Pipeline Infrastructure Alternative would potentially increase impacts on wildlife movement corridors and linkages due to the introduction of the aboveground infrastructure, including the pipeline and associated retaining walls and structures. While the ultimate height of the aboveground pipelines off the ground would likely vary based on underlying topography and land cover, it is assumed that there would be no significant impediment of movement for smaller wildlife and avian species, and that the greatest impact would be to large wildlife such as the bighorn sheep. Particular impacts to desert tortoise could be increased depending on the overall clearance of the pipelines. Overall, impacts to wildlife movement corridors or linkages would therefore be greater under this alternative, although the alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.

- **Cultural Resources.** Project activities involving ground disturbance and the installation of belowground infrastructure would directly and adversely affect the soil and landforms identified by some Interested Tribes as contributing elements of the Topock TCP. Because the land itself is essential to the significance of the Topock TCP, the disturbance of soil is considered a profound disruption in the belief system of some Interested Tribes and would affect the Topock TCP long after the Project is completed. The use of aboveground pipeline infrastructure would potentially reduce cultural resource impacts to the Topock TCP by reducing overall ground disturbing activities (53,170 fewer linear feet of subsurface trenches would be needed).

Potential impacts to unknown historical and unique archaeological resources from the Aboveground Pipeline Infrastructure Alternative would be lessened relative to the proposed Project because soil and ground disturbance would be substantially reduced. However, because there still remains a potential to impact unknown historical or unique archaeological resources from installation, maintenance and replacement of aboveground infrastructure, and because of the overall impacts to landscapes within the Topock TCP, the difference in soil disturbance would not change the conclusion that the impacts of the Aboveground Pipeline Alternative to unknown historical and unique archaeological resources would be significant and unavoidable.

Potential impacts to paleontological resources and human remains from the Aboveground Pipeline Alternative would be lessened relative to the Project because the soil and ground disturbance would be substantially reduced. However, because there is still a potential to impact as yet unknown paleontological resources and human remains, this difference would not alter the conclusion that the impacts of the Aboveground Pipeline Alternative to paleontological resources and human remains would be significant and unavoidable.

- **Water Supplies.** The use of water for construction of the remedy and decommissioning of the IM-3 Facility under the proposed Project is estimated to be approximately 152 to 192 acre feet annually (afa). During construction, the Aboveground Pipeline Infrastructure Alternative would potentially decrease the consumption of construction water for dust control since less

soil excavation and soil storage would be required. However, the long-term maintenance activities associated with the Aboveground Pipeline Infrastructure Alternative would require sandblasting every ten years, which would potentially increase the consumption of water for the alternative. Consumptive water use during operation of the proposed Project would consist of about 2.8 acre-feet per year (0.91 mg per year) of water to the TCS Evaporation Ponds, off-site disposal, and miscellaneous water use. This amount was determined to be within PG&E's 422 acre-feet per year of allotted capacity. Since this alternative is not expected to result in a substantial increase in water use and because the sources of water already exists and the entitlement volume has not changed since certification of the Groundwater FEIR, impacts related to water use would not be significant, similar to the proposed Project. Since the proposed Project would not result in significant impacts to water supplies and would not require mitigation, this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the proposed Project.

The Aboveground Pipeline Infrastructure Alternative would have greater impacts than the Project to the impact areas described below.

- **Aesthetics.** The Aboveground Pipeline Alternative would introduce long-term views of steel aboveground pipelines, as well as utility poles, retaining walls, and grade separation structures that would be located within the same general viewshed as the proposed Project, including Needles Rock, Topock Maze Loci A, B & C, Chemehuevi Mountains, Colorado River, Bureau of Land Management (BLM) Area of Critical Environmental Concern (ACEC) and the Havasu National Wildlife Refuge (HNWR). Views of the 4,800 linear feet of aboveground pipelines and associated infrastructure would be visible from these key viewsheds, resulting in greater visual intrusion to the natural landscape than the proposed Project. Similar to the proposed Project, the alternative would include surface treatment (i.e., muted earth-tone color pallet) of aboveground structures; however, visual intrusions under the Aboveground Pipeline Alternative would be substantially higher than that of the proposed Project, and would substantially degrade the existing visual character and quality of the site and its surroundings, resulting in greater significant aesthetic impacts than the Project.
- **Hazards and Hazardous Materials.** The Aboveground Pipeline Infrastructure Alternative has the potential to increase public health and safety impacts during both construction, and operation and maintenance of the Project. There would be greater worker safety and risk hazards during construction and operation of the Aboveground Pipeline Alternative than the proposed Project. Because of the Project Area's topography and steep slopes, there is limited work space to install aboveground infrastructure which increases worker safety risk associated with accidental falls and injury. During operation and maintenance activities, there would be an increased risk of incidents while working on steep slopes, or working near a high pressure natural gas pipeline. The placement of the aboveground piping would therefore result in greater significant hazards to the public or the environment through transport and potential release of hazardous materials than the proposed Project. Since the proposed

Project's impacts related to hazards and hazardous materials were determined to be less than significant with mitigation, this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.

- **Hydrology and Water Quality.** During construction, the Aboveground Pipeline Infrastructure Alternative would substantially reduce the amount of soil excavation and storage of soils, thereby minimizing potential runoff impacts associated with the stockpiling of soil material. However, the alternative would introduce new aboveground infrastructure that would potentially increase impervious surface that could affect the natural drainage patterns. Operation and maintenance activities, which include sandblasting activities, would potentially increase water quality impacts. Since the proposed Project's impacts related to hydrology and water quality were determined to be less than significant with mitigation, this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.
- **Noise.** Long-term operational noise impacts are expected to be greater than the proposed Project since the Aboveground Pipeline Infrastructure Alternative would require additional and more frequent operation and maintenance requirements, and potentially more periodic replacement. Pipeline construction associated with the proposed Project would likely be slightly reduced from the proposed Project at nearby sensitive receptors (Topock Maze, Moabi Regional Park, and Pirate Cove) as the trenching and excavation equipment use would be reduced from the proposed Project. Construction-related noise in Arizona to the sensitive receptors located along the south side of I-40 in Arizona and the sensitive receptors along the Topock 66 Spa and Resort would be expected to be similar. There still remains a potential to impact sensitive receptors during the aboveground pipeline construction and operation, the difference in soil disturbance would not change the conclusion that the noise impacts of the Aboveground Pipeline Alternative would be significant and unavoidable.
- **Utilities, Service Systems, and Energy.** Impacts related to off-site soil disposal (and associated traffic and air quality emissions) would be significantly reduced under this alternative due to the reduction in soil disturbance. Similar to the proposed Project, the Aboveground Pipeline Infrastructure Alternative would obtain power from the City of Needles, the Mohave Electric Cooperative, as well as various on-site sources of electricity, including the use of on-site generators and solar panels. The alternative would require the installation of 23 power poles, which is an additional increase of ten power poles required for the proposed Project. Therefore, this alternative would result in slightly greater utility and energy impacts than the proposed Project. Project impacts relative to utilities and energy were determined to be less than significant with mitigation, so this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the proposed Project.

1.8.2.2 Conclusion

As noted above, the project objectives are to ensure the Final Groundwater Remedy Project achieves cleanup levels and/or performance goals and compliance with RAO's within a

reasonable time frame; minimize ground disturbance to protect biological, historical, cultural resources and aesthetic impacts to the extent feasible; and to ensure efficiency and compliance with health and safety standards in consideration of public safety. As explained in the Final SEIR, Volume 2, Section 7.6.1.1, these primary Project objectives would not be attained with implementation of the Aboveground Pipeline Infrastructure Alternative because construction and long-term operation and maintenance of the Aboveground Pipeline Alternative would result in greater worker and public safety issues associated with an increased risk of injury or even death associated with worker/visitor falls due to the Project Area's topography and steep slopes. Further, the Aboveground Pipeline Alternative would require increased maintenance requirements, such as sand blasting and painting every 10 years. Therefore, the increased worker and public safety issues would not meet the Project's objectives (see Final SEIR, Volume 2, Section 7.6.1.1).

The Aboveground Pipeline Infrastructure Alternative would result in slightly worse impacts on aesthetics, biological resources, hazards and hazardous materials, hydrology and water quality, noise, and utilities, service systems and energy, based on 1) the location of the aboveground pipeline which would cause greater impacts to nearby viewer groups and noise sensitive receptors; 2) greater biological impacts to wildlife movement corridors, 3) increased hazardous materials impacts based on the transport and potential release of hazardous materials than the proposed Project; 4) increase in impervious surfaces which would increase hydrology and water quality impacts, and 5) greater energy impacts than the proposed Project. The Aboveground Pipeline Infrastructure Alternative would not result in the reduction of Project-related significant and unavoidable impacts to noise to a less than significant level.

DTSC rejects the Aboveground Pipeline Infrastructure Alternative because it would conflict with the Project's objectives and would be more environmentally impacting. The alternative would result in greater worker and public safety issues associated with an increased risk of injury or even death associated with worker/visitor falls, and would therefore not meet the project objective of "ensur[ing] efficiency and compliance with health and safety standards in consideration of public safety." As described in the SEIR, this alternative would also result in slightly worse impacts on aesthetics, biological resources, hazards and hazardous materials, hydrology and water quality, noise, and utilities, service systems and energy because of the location of the pipeline; and would not reduce significant unavoidable noise impacts to below significance. The Aboveground Pipeline Infrastructure Alternative is therefore less desirable and would not meet the requirements for selection under CEQA. For this reason, DTSC rejects the Aboveground Pipeline Infrastructure Alternative as impracticable and undesirable from a policy standpoint and, therefore, infeasible within the meaning of CEQA because of environmental, legal and policy reasons.

1.8.3 Elimination of On-site Soil Storage Alternative

1.8.3.1 Summary of Elimination of On-Site Soil Storage

Under the Elimination of On-site Soil Storage Alternative, soil storage would be eliminated entirely at the Soil Processing Area/Clean Storage Area, and all, or a significant majority of,

excavated soil would be exported off-site. While this alternative would eliminate the need for soil storage, a location near the Project Area would still be required for temporary soil staging for import soil, reusable site soil, and soil to be disposed of off-site. For purposes of this alternative, the existing BOR quarry area, which is located between the Station and the TCS Evaporation Ponds, could be used. The intent of this alternative is to minimize construction-related impacts to sensitive receptors at the nearby Moabi Regional Park, and to potentially reduce overall construction-related efforts. The use of the BOR quarry location for temporary management of site soil would increase soil transit time to work areas within the Project Area compared to use of the Soil Processing Area/Clean Soil Storage Area near Moabi Regional Park under the proposed Project. In addition, the use of the BOR quarry as a temporary soil staging area would likely increase consumption of construction water for dust control along unpaved roads, whereas the Soil Processing Area/Clean Soil Storage Area proposed for the Project is accessed primarily via paved roads.

The Elimination of On-site Soil Storage Alternative would slightly reduce or have similar impacts to the following Project impacts as described in the Final SEIR. Under some topics, the Elimination of On-site Soil Storage Alternative would reduce but not eliminate the Project's significant and unavoidable impacts to noise as described below.

- **Aesthetics.** The Elimination of On-site Soil Storage Alternative would eliminate views of a soil processing and storage area near Moabi Regional Park, including views of the soil staging area, a truck waiting area, and an approximately 12-foot high shade structure and elevated water tank. The proposed BOR quarry is located between the Station and the TCS Evaporation Ponds and in proximity to the Topock Maze, which represents a view from a location of tribal sensitivity. The access road improvements would be even closer to the Topock Maze, approximately 920 feet. However, the BOR quarry is situated in a ravine and may not be completely visible from the resource. Nevertheless, the constant stream of trucks during construction and operation of the BOR quarry as a soil storage location could result in additional aesthetic impacts from the Topock Maze. As stated in Section 4.1, "Aesthetics," visual impacts associated with the Project's Soil Processing Area/Clean Soil Storage Area would be minor and the activities would not obstruct distant views of Mohave Valley and surrounding peaks. However, aesthetic effects associated with the Soil Processing Area/Clean Soil Storage Area were determined to be less than significant with mitigation, so this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.
- **Air Quality.** The Elimination of On-site Soil Storage Alternative would result in an overall increase in approximately 153 additional export truck trips between the site and landfill over the course of the Project construction phases, as well as additional off road trips internal to the Project Area in order to access the BOR area. The overall increase in truck trips would result in additional annual air pollutant emissions; however, they would be spread over the course of construction activities and therefore would result in negligible daily emissions. This

alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.

- **Biological Resources.** The Elimination of On-site Soil Storage Alternative would result in less ground disturbance at the current Soil Processing/Clean Soil Storage Area. However, use of the BOR quarry could occur within or adjacent to sensitive habitat, potentially resulting in both direct and indirect impacts to biological resources. For the proposed Project, construction activities would occur throughout the Project Area within and adjacent to habitat for several special-status species, including special-status bird species, desert tortoise, ring-tailed cat, Nelson's bighorn sheep, special-status bats, and special-status plants. The Project would impede the use of active bat maternity roosts. However, Soil Processing Area/Clean Soil Storage Area impacts for the Project were determined to be less than significant with mitigation, so this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.
- **Hazards and Hazardous Materials.** The Elimination of On-site Soil Storage Alternative would result in the relocation of the Soil Processing Area/Clean Storage Area to the BOR quarry location. The proposed BOR quarry area would be smaller in size (1 acre versus 2.8 acres) and the level of soil processing activity would be reduced. The BOR quarry would be used to temporarily store excavated soil pending sampling to determine the appropriate management of that soil. The alternative would use the same preventative measures included in the Soils Management Plan and best management practices (BMPs) as the Project to minimize the potential hazards of the routine use, storage, disposal, or accidental spills to less than significant levels. Since the Project's impacts related to hazards and hazardous materials were determined to be less than significant with mitigation, this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.
- **Hydrology and Water Quality.** Since the Elimination of On-site Soil Storage Alternative requires the relocation of the temporary storage area to the BOR quarry location, the potential for runoff impacts associated with the stockpiles would be similar to the proposed Project. As the BOR quarry is located in a ravine, the quarry area hydrology would have to be evaluated to determine whether site drainage features would need to be installed to maintain adequate drainage in a manner compliant with Project requirements. This alternative would use the same preventative measures detailed in the Project's Operations and Maintenance Manual, the Soil Management Plan, and BMP Plan for construction to reduce impacts to hydrology and water quality to a level less than significant. Since the Project's impacts related to hydrology and water quality were determined to be less than significant with mitigation, this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.
- **Noise.** The Elimination of On-site Soil Storage Alternative would remove some, but not all, activities from the Moabi Regional Park area which contains sensitive residential receptors. The equipment used to construct the Construction Headquarters would remain the same

despite elimination of the Soil Processing Area/Clean Soil Storage Area. Construction of the Soil Processing Area/Clean Soil Storage Area would involve less noise generation than the Construction Headquarters since no buildings are being constructed, therefore while elimination of this facility near Moabi Regional Park would not completely eliminate noise impacts to the area, it would be reduced. Furthermore, the elimination of the Soil Processing Area/Clean Soil Storage Area from Moabi Regional Park would eliminate a constant stream of truck trips depositing clean soil during construction. Operation of the remedy, and the associated noise impacts, would not differ from the proposed Project. While this alternative would work to reduce operational noise resulting from soil truck trips, the majority of noise-producing truck trips associated with the Construction Headquarters/Long-Term Remedy Support Area would remain during operation. Given that the Construction Headquarters/Long-Term Remedy Support Area would still remain near Moabi Regional Park, removal of the Soil Processing Area/Clean Soil Storage Area would have a slight reduction in noise to the nearby residential sensitive receptors. The Project's impacts related to noise and vibration were determined to be significant and unavoidable even with the implementation of mitigation measures, and while noise levels would be slightly reduced by eliminating the Soil Processing Area/Clean Soil Storage Area, it would not avoid the significant and unavoidable impact identified for the proposed Project. As a result, this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.

- **Water Supplies.** This alternative would increase water consumption by an estimated 10 percent since the use of the BOR quarry as a temporary soil staging area would increase consumption of construction water for dust control. Despite the increase in water supply required by this alternative, impacts to water supplies would be similar to that required by the proposed Project. Since the Project would not result in significant impacts to water supplies, this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.

Although the Elimination of On-site Soil Storage Alternative would have greater impacts than the Project to cultural resources and utilities and service systems, it would not reduce or eliminate the Project's significant and unavoidable impacts to cultural resources.

- **Cultural Resources.** The BOR quarry activities proposed under this alternative would occur in closer proximity to the Topock Maze than its current proposed location. Therefore, potential impacts to unknown historical, unique archaeological resources, paleontological resources, or human remains from the Elimination of On-site Soil Storage Alternative would be similar to the Project. Because there remains a potential to impact unknown historical, unique archaeological resources, paleontological resources, or human remains, this incremental difference would not change the conclusion that the impacts of the Elimination of On-site Soil Storage Alternative to unknown historical, paleontological, unique archaeological resources, or human remains which would be significant and unavoidable.

The off-site disposal of soils is considered a highly sensitive Tribal issue since on-site soil and landforms are identified by some Interested Tribes as contributing elements of the Topock TCP. Because the land itself is essential to the significance of the Topock TCP, the disturbance of soil is considered a profound disruption in the belief system of some Interested Tribes and would affect the Topock TCP long after the Project is completed. The Elimination of On-site Soil Storage Alternative would permanently remove excavated soils from the Topock TCP and therefore result in greater cultural resource impacts than the proposed Project.

- **Utilities, Service Systems, and Energy.** The alternative could potentially decrease electricity use given the reduced area of the quarry location relative to the Soil Processing Area/Clean Soil Storage Area. The Soil Processing Area/Clean Soil Storage Area is 2.68 acres whereas the BOR quarry site is estimated to be 1 acre. This reduction in surface area would require less electricity to illuminate than was required at the Soil Processing Area/Clean Soil Storage Area. Diesel generators would provide electrical power; therefore, the electrical power that would be supplied by the City of Needles for the current Soil Processing Area/Clean Soil Storage Area would not be required. The alternative would result in greater impacts to existing landfills since it would increase the amount of soil exported for use as daily cover at a municipal landfill, which is estimated to be approximately 45,500 cubic yards of soil. This may result in a new impact since landfills have a limited capacity for the quantity of daily cover soil required. All other utility and energy impacts would be similar to the proposed Project. Project impacts relative to utilities and energy were determined to be less than significant; however, this alternative has the potential to result in a greater impact to existing landfills than the proposed Project.

1.8.3.2 Conclusion

As noted above, the Project objectives are to ensure the Final Groundwater Remedy achieves cleanup levels and/or performance goals and compliance with RAO's within a reasonable time frame; minimize ground disturbance to protect biological, historical, cultural resources and aesthetic impacts to the extent feasible; to ensure efficiency and compliance with health and safety standards in consideration of public safety. The primary project objectives could potentially be attained with the Elimination of On-site Soil Storage Alternative; however, given the additional construction time, this alternative would increase the amount of time needed to achieve the timely management of cleanup goals.

The Elimination of On-site Soil Storage Alternative would result in greater impacts to cultural resources due to the off-site disposal of soil, and potentially greater impacts to utilities and service systems due to increased transport of soils to local landfills. Soil displacement is considered to be a profound disruption in the belief system of some Interested Tribes and would affect the Topock TCP. The increase in soil at landfills could result in a new impact since landfills have a limited capacity for the quantity of daily cover soil required. As a result, the Elimination of On-site Soil Storage Alternative would not result in the reduction of Project-related significant and unavoidable impacts to cultural resources to a less than significant level.

DTSC rejects the Elimination of On-site Soil Storage Alternative because it would increase the amount of time needed to achieve the timely management of cleanup goals, which is less desirable for the achievement of project objectives. Additionally, this alternative would be more environmentally impacting. As described in the SEIR, this alternative would also result in slightly worse impacts to cultural resources due to the displacement of soil off-site, and would not reduce the significant unavoidable cultural resources impacts to below significance. The Elimination of On-site Soil Storage Alternative is therefore less desirable and would not meet the requirements for selection under CEQA. For this reason, DTSC rejects the Elimination of On-site Soil Storage Alternative as impracticable and undesirable from a policy standpoint and, therefore, infeasible within the meaning of CEQA because of environmental, legal and policy reasons (see CEQA Guidelines Section 15126.6; *California Native Plant Society*, *supra*, 177 Cal.App.4th at pp. 999, 1000–1003).

1.8.4 Freshwater Supply in California Alternative

1.8.4.1 Summary of Freshwater Supply in California

Under the Freshwater Supply in California Alternative, freshwater supply well(s) would be installed in California instead of in Arizona. The intent of this alternative is to avoid potential water quality impacts related to injection of Arizona freshwater in California that exceeds the maximum contaminant levels (MCL) of arsenic. Data from existing wells in the vicinity of the remedy suggest the aquifer near Moabi Regional Park is much less productive than that on the Arizona side of the river. Due to the less productive aquifer conditions, the volume of water obtained for use in the remedy would be greatly reduced, which would lengthen the amount of time it would take to clean up groundwater contamination. Moreover, the installation of freshwater supply wells on the California side of the Colorado River would require locating the wells far enough from the contaminated groundwater plume so that the drawdown created by freshwater pumping would not adversely affect the operation of the remedy. As a result, a California freshwater supply well would need to be located a sufficient distance away from the groundwater remedy; therefore, the length of freshwater pipelines in California to be installed would result in more ground disturbance than the proposed Project pipeline in Arizona.

The Freshwater Supply in California Alternative would reduce or have similar impacts to the following Project impacts as described in the Final SEIR. Under some topics, the Freshwater Supply in California Alternative would reduce but not eliminate the Project's significant and unavoidable impacts to cultural resources as described below.

- **Aesthetics.** The Freshwater Supply in California Alternative would introduce views of construction activities for supporting infrastructure, including equipment such as backhoes, concrete trucks and soil compactors, from the IRZ wells to a location approximately 2.9 miles north along the Colorado River. The viewshed area north of the Project Area is similar in nature and context to the Project Area, with exposure to similar foreground, middle ground, and background viewing distances. The alternative would introduce temporary construction views of pipeline installation along the Colorado River, as well as permanent views of a water supply well(s) with security fencing, though based on the current conceptual location, it

is unlikely that the structures would be visible to sensitive receptors, including from the Colorado River. Assuming the freshwater well infrastructure at the California site would incorporate façade colors which are consistent with that of the surrounding topography and vegetation, as specified in the Final Remedy Design and as defined in mitigation measure, the resulting impact on the surrounding quality and character of the landscape would be less than significant. Therefore, visual impacts associated with construction of the freshwater well infrastructure at the California site are expected to be similar to the Project. As stated in Section 4.1, “Aesthetics,” visual impacts associated with the Project would be less than significant, so this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.

- **Cultural Resources.** Potential impacts to unknown historical and unique archaeological resources from the Freshwater Supply in California Alternative are expected to be similar to the Project. Because there remains a potential to impact unknown historical or unique archaeological resources, the Freshwater Supply in California Alternative would not change the conclusion that the impacts would be significant and unavoidable. While the freshwater infrastructure in Arizona and associated impacts would be avoided by this alternative, this alternative would not influence the installation of MW-X and MY-Y or other future wells/infrastructure in Arizona under the Future Activity Allowance (including the up to 10 monitoring wells). Potential impacts to paleontological resources from the Freshwater Supply in California Alternative would be similar to the Project given its location and proximity to the Project Area, though additional surveys and documentation would be required. Potential impacts to human remains would also be similar to the Project because there still would be a potential to impact as yet unknown human remains at the alternate freshwater well location. CEQA impacts and determinations of their significance for known and unknown historical and unique archaeological resources, paleontological resources, and human remains would therefore be the same as described for the proposed Project. The Freshwater Supply in California Alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.
- **Hazards and Hazardous Materials.** The Freshwater Supply in California Alternative would result in similar pipeline infrastructure construction impacts given its proximity to the existing pipeline route along National Trails Highway; however, the identification of a viable well location as well as construction impacts would be prolonged due to the greater length of pipeline to the California freshwater well. The construction, operation and maintenance, and decommissioning of the Project under the Freshwater Supply in California Alternative could still result in the potential release of hazardous materials during use or delivery of hazardous materials as a result of component failure (e.g., valve, flange, or pipe), tank failure, or human error (e.g., tank overfilling). Potential impacts related to hazards and hazardous materials would be similar to the Project. Since the Project’s impacts related to hazards and hazardous materials were determined to be less than significant with mitigation, this alternative would

not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.

- **Hydrology and Water Quality.** Freshwater obtained from a primary well with future backup well options in California under this alternative would likely not have arsenic elevated above the MCL. Therefore, the Freshwater Supply in California Alternative would avoid potential water quality impacts related to freshwater that may contain arsenic above water quality objectives set by the State of California, or Cr(VI) above the 32µg/L water quality objective. However, given that TDS would likely be greater than 3,000 mg/L, additional pre-treatment would be required prior to injection. Early investigations also indicate that the water at the alternative California site may contain iron and manganese at concentrations that would require conditioning prior to injection. This would require additional pre-treatment prior to injection, similar to the proposed Project. The primary drawback of this alternative is related to the aquifer near Moabi Regional Park, which was determined to not be capable of delivering a sufficient quantity of water for the remedial action without adversely affecting the quality and quantity of water available from the existing non-Project related supply wells that are used by Moabi Regional Park.

Similar to the proposed Project, this alternative would also result in the use of carbon substrate to be injected into the aquifer, the potential generation of byproducts above water quality objectives, the discharge of remedy-produced water to the TCS Evaporation Ponds, and runoff associated with the soils stockpiling. Therefore, similar to the proposed Project, this alternative could result in the exceedance of water quality standards, violation of waste discharge requirements, and/or substantial degradation of water quality.

Similar to the proposed Project, the potential presence of manganese under the Freshwater Supply in California Alternative would require treatment in a purpose-built treatment system if the concentrations of manganese exceed the basin water quality objective of 0.05 mg/L. Similar to the proposed Project, this alternative would require the construction and operation of the manganese treatment system as a contingency. However, given the reduced levels of arsenic in California freshwater compared to Arizona, impacts to water quality associated with this alternative would be slightly reduced compared to the proposed Project. Since the Project's impacts related to hydrology and water quality were determined to be less than significant with mitigation, this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.

- **Noise.** The Freshwater Supply in California Alternative would relocate freshwater infrastructure to the California side of the Colorado River, approximately 2.9 miles north of the IRZ wells. Extending north from Moabi Regional Park, the pipeline for the Freshwater Supply in California Alternative would be primarily installed through unpopulated and densely vegetated land not in close proximity to any sensitive noise receptors; however, a portion of the pipeline would most likely be installed near Moabi Regional Park, which is a sensitive residential and recreational receptor. Under this alternative, the Project components

to be located in Arizona would be MW-X and MW-Y or other wells under the Future Activity Allowance (namely up to 10 monitoring wells), which would be very localized noise events and would reduce noise-generating activities near the Topock Marina. The location of a freshwater pipeline in California to connect the freshwater wells to the Project Area would likely be located near Moabi Regional Park. The pipeline route in California would not likely be closer to residential and recreational receptors than the Project freshwater pipeline in Arizona, which is 180 feet from sensitive receptors. As a result, although the alternative could constitute a decrease in construction and maintenance-related noise that affects sensitive receptors near the Topock Marina in Arizona, significant and unavoidable noise impacts would remain for the Project as a whole, and this alternative would not result in avoiding or substantially lessening a significant adverse environmental effect of the Project.

- **Utilities, Service Systems, and Energy.** Similar to the proposed Project, the Freshwater Supply in California Alternative would obtain power from the City of Needles, as well as various on-site sources of electricity, including the use of on-site generators and solar panels. Overall, this alternative would result in similar utility and energy impacts as the proposed Project. Project impacts relative to utilities and energy were determined to be less than significant with mitigation, so this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.
- **Water Supplies.** Conceptual modelling conducted for the Freshwater Supply in California Alternative indicates that pumping at the proposed maximum 900 gpm rate would not be achieved due to the less productive aquifer conditions. The pumping rate for the Freshwater Supply in California Alternative would be substantially decreased to 60 gpm. At this rate, the Freshwater Supply in California Alternative would not produce adequate groundwater supplies to achieve adequate levels of freshwater to flush the remedy system. Since the Project's impacts related to water supply were determined to be less than significant with mitigation, this alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.

The Freshwater Supply in California Alternative would have greater impacts than the Project to air quality and biological resources, as described below. Because neither of these resource topics would result in significant and unavoidable impacts under the proposed Project, this alternative would not avoid or substantially reduce any of the Project's significant and unavoidable impacts.

- **Air Quality.** The freshwater well proposed in California would require approximately 2.9 miles of freshwater pipeline to connect the freshwater source with the IRZ wells in the floodplain. Total ground disturbance resulting from Project freshwater wells in Arizona would be up to 2.13 miles if Site B were used, and 1.43 miles if wells near HNWR-1A were used. Although the types of construction equipment used under this alternative use would be similar to the Project, the increased distance of installation of freshwater pipeline in California would increase the duration of construction activity which would increase overall

emissions. The air pollutant emissions during construction, operation and maintenance, and decommissioning activities would be greater than the proposed Project. This alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.

- **Biological Resources.** The Freshwater Supply in California Alternative would result in greater ground disturbing impacts associated with freshwater pipeline installation in California since the pipeline would cover a greater length than the proposed Project. In addition, pipeline installation in California north of the Project Area would occur in densely vegetated habitat, whereas the proposed Project's Arizona alignment would be primarily installed within the Topock-Oatman highway ROW. In addition, the use of the Freshwater Supply location in California is located in an unnamed wash near the Colorado River and is within proximity to a BLM-designated Area of Critical Concern (Beale Slough). Similar to the proposed Project, this alternative site may occur within or adjacent to sensitive habitat, potentially resulting in both direct and indirect impacts to biological resources. Both the proposed Project and the Freshwater Supply in California Alternative would involve construction activities that would occur within and adjacent to habitat for several special-status species, including special-status bird species, desert tortoise, ring-tailed cat, Nelson's bighorn sheep, special-status bats, and special-status plants. However, the overall ground disturbance would be greater under the Freshwater Supply in California Alternative than the proposed Project, which would result in more severe impacts to biological resources. This alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.

1.8.4.2 Conclusion

As noted above, the Project objectives are to ensure the Final Groundwater Remedy achieves cleanup levels and/or performance goals and compliance with RAO's within a reasonable time frame; minimize ground disturbance to protect biological, historical, cultural resources and aesthetic impacts to the extent feasible; and to ensure efficiency and compliance with health and safety standards in consideration of public safety. The primary Project objectives could potentially be attained with the Freshwater Supply in California Alternative, however, the timeframe for cleanup under this alternative would increase from 30 years for the proposed Project to 90 years for the alternative. Given the extended timeframe for cleanup, this alternative would not achieve the Project's objective to achieve the timely management of cleanup goals.

The Freshwater Supply in California Alternative would result in slightly worse impacts to air quality and biological resources, since it would result in greater emissions and greater ground disturbance. Because neither of these resource topics would result in significant and unavoidable impacts under the proposed Project, this alternative would not reduce or eliminate any of the Project's significant and unavoidable impacts. Although construction-related significant and unavoidable noise impacts to receptors in Arizona would be eliminated, significant and unavoidable noise impacts would remain for the Project as a whole.

DTSC rejects the Freshwater Supply in California Alternative because it would increase the amount of time needed to evaluate available water options in California, which has cascading impacts to the timely management of cleanup goals, and would thereby lengthen time to achieve project objectives, and would be slightly more environmentally impacting. As indicated in the SEIR, freshwater obtained from California could still contain TDS, iron, or manganese above concentrations that would require conditioning prior to injection into the aquifer. As such, the Freshwater Supply in California Alternative may require pretreatment prior to injection, similar to the proposed Project, and is therefore not more desirable than the Project from a pretreatment standpoint. For this reason, DTSC rejects the Freshwater Supply in California Alternative as impracticable and undesirable from a policy standpoint and, therefore, infeasible within the meaning of CEQA because of environmental, legal and policy reasons.

1.8.5 Rejection of No Project Alternative

Pursuant to Section 15126.6(e)(2) of the CEQA Guidelines, the No Project Alternative shall:

...discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time the environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

The No Project Alternative represents what would reasonably be expected to occur in the foreseeable future if the Project is not approved. The existing condition at the time the NOP was published in June 2015 included ongoing operation of the Station and related PG&E facilities in the Project Area. In addition, PG&E has been operating and maintaining the IM-3 extraction and treatment system at the Project Site since July 2005. Reasonably foreseeable future activities are associated with the ongoing operation of the Station as well as soil sampling and analysis at the Project Area, which is being implemented independently of the proposed Project, and is expected to continue through 2018. These projects form the baseline for the No Project Alternative analysis presented in this section, which characterizes the activities occurring in the Project Area if the Project analyzed in the SEIR were not to occur.

For the No Project Alternative, the Final Remedy Design and Future Activity Allowance would not be implemented. The fundamental objective of the proposed Project as presented in the Groundwater FEIR certified in January 2011 is to clean up the groundwater contamination related to the historical release of chemicals at the Station, including into Bat Cave Wash and the East Ravine near the Station, in a manner that would be consistent with all applicable regulatory requirements and to do so within a reasonable period of time when compared between viable alternatives. Groundwater contamination would continue to exist in the Project Area and would continue to pose a risk to human health and the environment if the No Project Alternative were implemented. Under the No Project Alternative, the operation of the IM-3 Facility would continue to occur. If the Final Remedy Design was not implemented, PG&E must still protect the beneficial water resource of the Colorado River from the potential impacts of the Cr(VI) plume contamination. Thus, the interim measure to continue extraction of contaminated groundwater, treatment, and reinjection of the treated water would continue to be required by DTSC under

Section IV.A of the 1996 Correction Action Consent Agreement, which was entered into pursuant to California Health and Safety Code, Section 25187, until such treatment is properly mitigated. Therefore, it would not be feasible to abandon the IM-3 Facility under the No Project Alternative.

1.8.5.1 Ability to Meet Most of the Project Objectives

The No Project Alternative would not meet any of the Project objectives. Most importantly, it would not meet the fundamental objective - to clean up the groundwater contamination related to the historical release of chemicals at the Station, including into Bat Cave Wash and the East Ravine near the Station, in a manner that would be consistent with all applicable regulatory requirements and to do so within a reasonable period of time when compared between viable alternatives.

This alternative also would not provide adequate protection of human health or the environment, and does not meet defined RAOs. No active remediation would occur, and no institutional controls would exist to prohibit groundwater use for potable water supply. The existing contaminated groundwater plume would be left on surrounding landowner property without ongoing oversight. This alternative would result in potentially significant environmental impacts related to potential ingestion of groundwater known to be contaminated with Cr(VI), and long-term presence of contaminated groundwater. In addition, improper handling of existing infrastructure that has been used to monitor and remediate the contamination through the lack of a formal decommissioning process could result in significant environmental impacts. Therefore, the No Project Alternative would not meet the primary and fundamental project objective as noted above.

1.8.5.2 Comparison of Environmental Impacts

This section compares the environmental impacts of the No Project Alternative to those of the Project.

- **Aesthetics.** The introduction of new facilities within potentially scenic corridors associated with the proposed Project would not occur under this alternative. The No Project Alternative would not impact scenic vistas or the visual character of the Project Area. However, the visual effects of the proposed Project were determined to be less than significant with mitigation. Under the No Project Alternative, the Project Area would not be affected by Final Remedy Design activities that may alter the religious and cultural experience of Native American Tribes on-site. Thus, the No Project Alternative would result in fewer aesthetic impacts compared to the proposed Project.
- **Air Quality.** The No Project Alternative would not increase air quality impacts from existing conditions. The proposed Project would result in significant air quality impacts, which would be reduced to less than significant levels with mitigation measures. The No Project Alternative would result in fewer air quality impacts when compared to the proposed Project. Thus, the No Project Alternative would result in fewer air quality impacts compared to the proposed Project.

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- **Biological Resources.** The No Project Alternative would not alter the existing site condition. Final Remedy construction, operation and maintenance, and decommissioning activities would not be conducted, including construction of new buildings, roads, pipelines, and wells. Therefore, the No Project Alternative would result in fewer biological resource impacts than the proposed Project.

However, if the No Project Alternative were implemented, potentially harmful contaminated groundwater that remains on the Project Area would remain unmitigated, which could pose a threat to the protection of health, safety, and the environment including a risk to aquatic resources, plant and animal species that depend on uncontaminated desert habitat for survival. Thus, the No Project Alternative would result in greater biological resource impacts compared to the proposed Project.

- **Cultural Resources.** The No Project Alternative would not involve activities that could impact significant archaeological, historic, or paleontological resources, or human remains. The proposed Project would result in significant and unavoidable adverse change to historical resources, including the Topock TCP. The No Project Alternative would not alter existing conditions and would therefore not cause impacts to cultural resources. However, the No Project Alternative would result in the passive continuation of groundwater contamination and therefore, water, which is a contributor to the TCP, would continue to be impacted. Because the No Project Alternative would cause no adverse change to archaeological, historical resources, human remains, or paleontological resources, it would not cause or contribute to any cumulative effect on cultural resources. Although the contaminated water would continue to contribute to impacts to the Topock TCP, the impact would not be as great to the Topock TCP as construction the proposed Project. Therefore, the No Project Alternative would avoid most of the significant adverse effects to historical and cultural resources that would occur under the Project.
- **Hazards and Hazardous Materials.** The No Project Alternative would not involve the excavation and ground disturbance of the Project Area. There would be no disruption of soil and no related potential for disruption or exposure of hazardous materials. If the No Project Alternative were implemented, however, potentially harmful contaminated groundwater that remains on the Project Area would remain unmitigated, which could pose a threat to the protection of health, safety, and the environment as the contaminant may spread as a result of weather conditions or other human-related disturbances which could occur in the Project Site. Thus, the No Project Alternative would result in greater hazards and hazardous materials impacts compared to the proposed Project.
- **Hydrology and Water Quality.** The No Project Alternative would not involve the excavation and related ground-disturbing activities on the Project Site. There would be no disruption of soil or water use and therefore no resulting impacts to hydrology or water quality. If the No Project Alternative were implemented, however, contaminated groundwater would remain which would increase the risk to water quality in particular as a result of weather conditions

or other human-related disturbances, which could occur in the Project Area. Thus, the No Project Alternative would result in greater hydrology and water quality impacts compared to the proposed Project.

- **Noise.** The No Project Alternative would not involve activities that would generate noise. The proposed Project would result in significant and unavoidable impacts to ambient noise levels even after implementation of mitigation. As a result, the No Project Alternative would not alter the existing condition and would have fewer noise impacts than the proposed Project. However, the No Project Alternative would result in fewer noise impacts compared to the proposed Project.
- **Utilities, Service Systems, and Energy.** The No Project Alternative would continue to use existing utilities, services and electricity currently provided at the Project Area. Project impacts relative to utilities and energy would not occur with the No Project Alternative. However, these impacts were determined to be less than significant with mitigation, so the No Project Alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.
- **Water Supplies.** The No Project Alternative would not involve water consumption activities or the depletion of groundwater resources and therefore no resulting impacts to water supply would occur. However, these impacts were determined to be less than significant with mitigation, so the No Project Alternative would not serve the purpose of avoiding or substantially lessening a significant adverse environmental effect of the Project.

1.8.6 Environmentally Superior Alternative

CEQA requires that an EIR identify the environmentally superior alternative of a project other than the No Project Alternative (CEQA Guidelines Section 15126.6(e)(2)). As previously discussed, the Aboveground Pipeline Infrastructure Alternative would result in minor reductions in environmental effects when compared to the proposed Project. The Aboveground Pipeline Infrastructure Alternative is therefore considered the Environmentally Superior Alternative. While the Aboveground Pipeline Infrastructure Alternative would potentially reduce air quality, biological and cultural resource impacts, it would not avoid them. In comparison, under the On-site Soil Storage Alternative, potential noise impacts would be slightly reduced relative to the proposed Project because the activities would be relocated away from sensitive receptors. However, the Elimination of On-site Soil Storage Alternative would result in greater impacts to existing landfills due to the substantial increase in soil export quantities, and would result in greater impacts to the Topock TCP and Tribal resources because native soil would be removed from the site. Under the Freshwater Supply in California Alternative, construction-related significant and unavoidable noise impacts to receptors in Arizona would be eliminated; however, significant and unavoidable noise impacts would remain for the Project as a whole. Additionally, increased air quality and biological resources impacts would result.

It is important to note that the Aboveground Pipeline Alternative would achieve most of the basic Project objectives, but not every single objective. The Project objectives are to ensure the Final Groundwater Remedy achieves cleanup levels and/or performance goals and compliance with RAO's within a reasonable time frame; minimize ground disturbance to protect biological, historical, cultural resources and aesthetic impacts to the extent feasible; to ensure efficiency and compliance with health and safety standards in consideration of public safety. The construction and long-term operation and maintenance of the Aboveground Pipeline Alternative would result in greater worker and public safety issues associated with an increased risk of injury or even death associated with worker/visitor falls due to the Project Area's topography and steep slopes. Further, the Aboveground Pipeline Alternative would require increased maintenance requirements, such as sand blasting and painting every 10 years. Since the construction and long-term maintenance and operation of the Aboveground Pipeline Alternative would result in greater risks to worker and public safety issues as well as greater aesthetic impacts, this alternative would not meet two of the environmental objectives of the Project.

1.8.7 Conclusions Regarding Project Alternatives

Based on the foregoing analysis and pursuant to CEQA Guidelines Section 15126.6, DTSC has considered a range of reasonable alternatives to the Project which could feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen certain significant effects of the project. DTSC has evaluated the comparative merits of the various alternatives and identified and analyzed potentially environmentally superior alternatives. Based on this analysis and substantial evidence in the Record, DTSC finds and determines that none of the alternatives are feasible within the meaning of CEQA and therefore rejects each alternative in favor of the proposed Project.

1.9 Statement of Overriding Considerations

CEQA requires all public agencies to balance the benefits of a proposed project against its unavoidable environmental effects in determining whether to approve the project or not. DTSC proposes to approve the Project despite the significant and unavoidable adverse impacts identified in the Final SEIR for the Project. In making this determination, DTSC is guided by CEQA Guidelines Section 15093 which provides as follows:

- (a) CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable."
- (b) When the lead agency approves a project which will result in the occurrence of significant effects which are identified in the final EIR but are not avoided or substantially lessened, the agency shall state in writing the specific reasons to support its action based on the Final

EIR and/or other information in the record. The statement of overriding considerations shall be supported by substantial evidence in the record.

- (c) If an agency makes a statement of overriding considerations, the statement should be included in the record of the project approval and should be mentioned in the notice of determination. This statement does not substitute for, and shall be in addition to, findings required pursuant to Section 15091.

As described in the Final SEIR, the Project involves the construction, operation and maintenance, and decommissioning of the Final Groundwater Remedy Project, based on the Final Remedy Design and as further described in the Final SEIR, Volume 2, Chapter 3 of the SEIR, relative to the program-level impact analysis in the certified Groundwater FEIR. Benefits of the Project are discussed below in Section 1.9.2.

With the implementation of the mitigation measures and conditions of approval adopted by DTSC, most of the significant environmental impacts of the Project can be mitigated to less than significant levels. As indicated in the Final SEIR, however, the Project is expected to result in significant and unavoidable impacts on cultural resources (direct and cumulative), noise (direct and cumulative), and aesthetics (cumulative).

1.9.1 Significant and Unavoidable Impacts of the Project

Although most significant adverse impacts of the Project have been avoided or substantially lessened to less than significant levels through the imposition of mitigation measures, as described in the Final SEIR and Findings, there remain some Project impacts that cannot feasibly be mitigated to a less-than-significant level, especially in regards to the sacred nature of the area to some Interested Tribes. The Final SEIR identified the following significant and unavoidable impacts of the Project, even after implementation of all feasible mitigation measures mentioned below and included in Table 1:

- **IMPACT CUL-1: Cause Substantial Adverse Change in the Significance of a Historical Resource as Defined in CEQA Guidelines Section 15064.5.** Construction, operation and maintenance, and decommissioning activities of the proposed Project could result in substantial adverse changes to historical resources in the Project Area, including (1) the Topock TCP; (2) other historical resources listed in the Final SEIR, Volume 2, Chapter 4.4, Cultural Resources, Table 4.4-2, and (3); historical resources that may be inadvertently identified during construction. Impacts could occur through ground disturbance and other Project-related activities or through the introduction of out-of-character visual or auditory intrusions to historical resources that gain their significance in part because historical associations or aesthetic values.
 - Mitigation Measure CUL-1a-1: Avoidance and Preservation in Place (Groundwater FEIR Measure with Revisions)

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- Mitigation Measure CUL-1a-2: Develop Tribal Access Plan (Measure Completed – Tribal Access Plan attached as Appendix P of the C/RAWP).
 - Mitigation Measure CUL-1a-2a: Implement Tribal Access Plans (New Measure).
 - Mitigation Measure CUL-1a-3: Site Security (Groundwater FEIR Measures with Revisions).
 - Mitigation Measure CUL-1a-3a: Professional Qualifications and Annual Historical Resource Condition Inspection (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1a-3b: Develop Site Security Plan (Measure Completed – Site Security Plan attached as Appendix Q of the C/RAWP).
 - Mitigation Measure CUL-1a-3c: Coordination with BLM and San Bernardino County (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1a-3d: Signage (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1a-3e: Site Security (New Measure)
 - Mitigation Measure CUL-1a-4: Technical Review Committee (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1a-5: Avoidance of Indigenous Plants of Biological and Cultural Significance (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1a-6: Noise (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1a-7: Nighttime Lighting (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1a-8 (a through p): Develop Cultural Impact Mitigation Program (CIMP) (Measure Completed – Cultural Impact Mitigation Program attached as Appendix H of the C/RAWP).
 - Mitigation Measure CUL-1a-8q: Implement Cultural Impact Mitigation Program (New Mitigation Measure).
 - Mitigation Measure CUL-1a-9: Preference for Previously Disturbed Areas (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1a-10: Avoidance of Topock Maze (Groundwater FEIR Measure with Revisions).

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- Mitigation Measure CUL-1a-11: Open Grant Funding (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1a-12: Tribal Ceremonies (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1a-13: Develop Worker Education Training Program (Measure Completed – Worker Education Training Program is attached in Appendix P of the C/RAWP).
 - Mitigation Measure CUL-1a-13a: Implement Worker Education Training (New Measure).
 - Mitigation Measure CUL-1a-14: Tribal Notification of Potential Future Activities (New Measure).
 - Mitigation Measure CUL-1a-15: Future Activity Allowance Cultural Resources Survey (New Measure).
 - Mitigation Measure CUL-1a-16: Implement Restoration Plan (New Measure).
 - Mitigation Measure CUL-1a-17: Displaced Soil Procedures (New Measure).
 - Mitigation Measure CUL-1a-18: Aesthetics (New Measure).
 - Mitigation Measure CUL-1a-19: Implement Treatment Plan for the Topock TCP (New Measure).
 - Mitigation Measure CUL-1b/c-1: Consider Locations of Historical Resources during Design (Groundwater FEIR Measure with revisions).
 - Mitigation Measure CUL-1b/c-2: Prepare a Cultural Resources Study (Measure Completed – several cultural resources studies were completed, including “Geoarchaeological Assessment for the Topock Remediation Project” [Appendix T of the C/RAWP] and “Results of Pre-Construction Field Verification Inspections for the Topock Compressor Station Groundwater Remedy” [Moloney and Price 2014, confidential report on file at DTSC]).
 - Mitigation Measure CUL-1b/c-3: Prepare and Implement a Treatment Plan for Historical Resources other than the Topock TCP (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1b/c-4: Cultural Resources Monitoring Program and Inadvertent Discovery Measures (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1b/c-4a: Cultural Resources Monitoring Program.

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- Mitigation Measure CUL-1b/c-4b: Inadvertent Discoveries.
 - Mitigation Measure CUL-1b/c-5: Avoidance and Preservation in Place (New Measure).
 - Mitigation Measure CUL-1b/c-6: Implementation of Additional Protective Measures (New Measure).
 - Mitigation Measure CUL-1b/c-7: Compliance with SOI Standards (New Measure).
 - **IMPACT CUL-2: Cause a Substantial Adverse Change in the Significance of a Unique Archaeological Resource.** Many of the cultural resources listed in the Final SEIR, Volume 2, Chapter 4.4, Cultural Resources, Table 4.4-3 may meet the CEQA criteria for a unique archaeological resource. Construction, operation and maintenance, and decommissioning activities of the proposed Project could result in substantial adverse changes to one or more unique archaeological resource in the Project Area through ground disturbance and other project-related activities.
 - Mitigation Measure CUL-1b/c-1: Consider Locations of Historical Resources during Design (Groundwater FEIR Measure with revisions).
 - Mitigation Measure CUL-1b/c-3: Prepare and Implement a Treatment Plan for Historical Resources other than the Topock TCP (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1b/c-4: Cultural Resources Monitoring Program and Inadvertent Discovery Measures (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure CUL-1b/c-4a: Cultural Resources Monitoring Program.
 - Mitigation Measure CUL-1b/c-4b: Inadvertent Discoveries.
 - Mitigation Measure CUL-1b/c-5: Avoidance and Preservation in Place (New Measure).
 - Mitigation Measure CUL-1b/c-6: Implementation of Additional Protective Measures (New Measure).
 - Mitigation Measure CUL-1b/c-7: Compliance with SOI Standards (New Measure).
 - **IMPACT CUL-4: Disturb Any Human Remains, Including Those Interred Outside of Formal Cemeteries.** Ground-disturbing activities required for all project phases may disturb as-yet undiscovered human remains, including Native American burial remains (i.e., human remains and grave goods).
 - Mitigation Measure CUL-4: Discovery of Human Remains (Groundwater FEIR Measure with Revisions).

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- **IMPACT NOISE-1: Long-Term Operational-Related Non – Transportation Noise and Vibration Impacts.** Construction activities associated with the Additional Activity Allowance that could occur during long-term operation and maintenance could result in noise levels that exceed applicable standards.
 - Mitigation Measure NOISE-2: Potential Impacts to Noise Levels and Noise Standards (Groundwater FEIR Measure with Revisions).
 - **IMPACTS NOISE-2: Groundborne Vibration Impacts Caused by Construction Activities.** Implementation of the proposed Project would result in the exposure of sensitive receptors to groundborne vibration levels that exceed the applicable standards of the San Bernardino County Development Code (83.01.090) and the Mohave County Zoning Ordinance. These groundborne vibration levels could result in annoyance or architectural/structural damage.
 - Mitigation Measure NOISE–1: Short-Term Groundborne Vibration Levels Caused by Project Activities near Sensitive Receptors. (Groundwater FEIR Measure with Revisions)
 - **IMPACT NOISE-3: Project-Generated Construction-Related Noise Levels.** Implementation of the proposed Project would result in intermittent construction activities associated with the installation of new wells, roadways, water conveyance, utilities, water filtration facilities, and structures. These construction activities could potentially expose sensitive receptors to noise levels in excess of the applicable noise standards and/or result in a substantial increase in ambient noise levels.
 - Mitigation Measure NOISE-2: Potential Impacts to Noise Levels and Noise Standards (Groundwater FEIR Measure with Revisions).
 - **IMPACT NOISE-4: Land Use Compatibility of Future Project Noise Levels with the Topock Traditional Cultural Property.** Implementation of the proposed Project could result in future noise (construction, operation and maintenance, and decommissioning activities) that could result in conflicts with land use compatibility that exceed San Bernardino County standards for Places of Worship or conflict with Native American values associated with the Topock TCP.
 - Mitigation Measure NOISE–1: Short-Term Groundborne Vibration Levels Caused by Project Activities near Sensitive Receptors. (Groundwater FEIR Measure with Revisions)
 - Mitigation Measure NOISE-2: Potential Impacts to Noise Levels and Noise Standards (Groundwater FEIR Measure with Revisions).
 - **IMPACT CUM-1: Cumulatively Considerable Impacts to Aesthetic Resources.** Implementation of the proposed Project, in combination with other projects in the geographic scope, could cause a substantial adverse change to scenic vistas, scenic resources, and the existing visual character and quality of the site and its surroundings.

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- Mitigation Measure AES-1: Substantial Adverse Effects on Scenic Vistas (Groundwater FEIR Measure with Revisions).
 - Mitigation Measure AES-2: Substantial Damage to Scenic Resources within a Scenic Corridor (Groundwater FEIR Measure with Revisions).
 - **IMPACT CUM-2: Cumulatively Considerable Impacts to Cultural Resources.**

Implementation of the proposed Project, in combination with other projects in the geographic scope, could cause a substantial adverse change in the significance of the historical resource identified as the Topock TCP; cause a substantial adverse change in the significance of unknown historical or unique archaeological resources; result in a substantial adverse change to a unique paleontological resource or unique geologic feature; and disturb human remains, including those interred outside of formal cemeteries.

 - Mitigation Measures CUL-1 through CUL-4 (see above).
 - Mitigation Measure CUL-5: Cumulative Impacts to the Topock TCP (New Measure).
 - **IMPACT CUM-3: Cumulatively Considerable Impacts Related to Noise and Vibration.**

Implementation of the proposed Project, in combination with Soil Remediation Activities in the Project Area that are in the geographic scope, could cause a substantial adverse increase related to short-term construction-related noise and vibration, as well as compatibility with noise levels at the Topock TCP.

 - Mitigation Measure NOISE-3: Cumulative Noise Increases from Remedial Activities (New Measure).

1.9.2 Benefits of the Project

DTSC has determined that the economic, legal, social, technological, and other benefits of implementing the Project outweigh and override the significant and unavoidable adverse effects of the Project. DTSC has determined that the benefits of the Project, when balanced against all adverse effects, cause those effects remaining after mitigation to be acceptable. The following listed considerations listed below are further explained in subsequent paragraphs:

- The Final Groundwater Remedy Project will prevent and minimize migration of Cr(T) and Cr(VI) in groundwater to ensure concentrations in surface waters do not exceed water quality standards that support the designated beneficial uses of the Colorado River—one of the most important water systems in the United States;
- The Final Groundwater Remedy Project will avoid and reduce the cumulative impacts on the environment and minimize risks to human health associated with contaminated groundwater by preventing and minimizing migration of Cr(T) and Cr(VI) in groundwater;
- The Final Groundwater Remedy Project will result in the cleanup of groundwater contamination of a beneficial use drinking water supply as designated by the Regional Water Quality Control Board;

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- The Final Groundwater Remedy Project will meet the substantive provisions of promulgated requirements that are ARARs, which were determined by DOI, BLM, USFWS, and Bureau of Reclamation (DOI 2009). ARARs must be attained by the remedial action pursuant to Section 121(d) of CERCLA, which assures protection of human health and the environment, and requires attainment of “legally applicable or relevant and appropriate standard(s), requirement(s), criteria, or limitation(s);” and
 - The Final Groundwater Remedy Project would bring an economic benefit to Eastern San Bernardino County through the employment of additional workers and experts needed to implement the remedy and mitigation measures.

Prevent or Minimize Migration of Cr(T) and Cr(VI) In Groundwater to Support the Designated Beneficial Uses of the Colorado River

One of the main objectives of the proposed Project is to prevent and minimize migration of Cr(T) and Cr(VI) in groundwater to ensure concentrations in surface waters do not exceed water quality standards that support the designated beneficial uses of the Colorado River (11 µg/L Cr(VI)). The Colorado River is one of the most important water systems in the United States that connect watersheds in seven western states. The background and environmental setting discussions of the SEIR explain the importance of the river for drinking water, recreational, and cultural uses. As explained in the SEIR, DTSC has not detected any degradation of the water quality within the Colorado River as a result of PG&E’s past or present operation and believes that the current interim measures of extraction, treatment, and reinjection of treated water have been successful at keeping the groundwater plume from damaging the river which continues to be a valuable drinking water resource for millions of Southern Californians and Arizonians. DTSC undertook the SEIR specifically to ensure that the environmental impacts of the Project are properly evaluated as specific information regarding the Project is gained during the various phases of investigation and design. The Final SEIR for the Final Groundwater Remedy Project is based on the Final Remedy Design and the C/RAWP, which reflect modifications and clarifications by PG&E as a result of the collaborative and iterative design process.

The mere presence of Cr(VI) in groundwater and its proximity to the Colorado River provides a sufficient public interest to pursue remediation. Given the importance of the Colorado River to water supply, its protection is imperative to avoid a myriad of impacts, such as potential health, economic, social, environmental, and other risks that would arise from contamination of a major water supply. DTSC believes that sufficient information has been collected to select a viable groundwater remedy to reduce the toxicity and mobility of the harmful Cr(VI). DTSC believes that the plume, as defined, can be properly contained and remediated with the technology as proposed and made the policy determination to move forward with protecting human health and the environment.

Reduce Cumulative Impact on Human Health and the Environment.

As indicated in the Project objectives identified in the Final SEIR, the Project is consistent with DTSC’s policy to protect and promote public health and the environment. The Project will continue to ensure that Cr(VI) will not enter the Colorado River, an important source of water for

municipal, agricultural, and other uses and an important habitat corridor for numerous special status species (see above).

In comparison to the other alternatives, the Final Remedy Design is the only feasible remedy that would reduce cumulative impacts to human health and the environment within a reasonable period of time and with the least environmental effects. Therefore, DTSC made the policy determination to move forward with the Final Remedy Design with these social and health considerations in mind.

Cleanup of Groundwater Contamination, Which Is Designated by the Regional Water Quality Control Board as a Groundwater Body Suitable for Beneficial Use for Drinking Water Supply.

The groundwater basin beneath the Station is still designated by the Regional Water Quality Control Board (RWQCB) to be of beneficial use. DTSC must protect the groundwater basin from contamination because the basin is designated by the RWQCB as a groundwater body suitable for beneficial use for drinking water supply. Although the interim measures are currently protecting the Colorado River from potential threat, the interim measures was not designed to treat the entire mass of the hexavalent chromium plume. Furthermore, the use of the existing interim measure was considered as an alternative during the 2011 groundwater remedy selection technology but was rejected because it will not achieve compliance with the Remedial Action Objective within a reasonable timeframe as required by California State Water Board Resolution 92-49. Without Project implementation, contamination will continue to threaten groundwater, which would result in economic and environmental instability. Therefore, a final action must be taken to reduce the toxicity and mobility of the hazard from the Cr(VI) to ensure protection of this beneficial use. The benefit in an expedited cleanup to protect the Colorado River and return of the groundwater basin to beneficial use outweighs the significant and unavoidable impacts of the Project because of economic, environmental, and other considerations. Therefore, DTSC has made the policy determination to move forward with the Project to ensure protection and long-term remediation of surface and groundwater.

Meet the Substantive Provisions of Promulgated Requirements That Are Applicable or Relevant and Appropriate to the Actions

As described in the Final SEIR and in Section 1.2.1 of these Findings, remedial actions taken under CERCLA authority must meet the substantive provisions of promulgated requirements that are ARARs, which were determined by DOI, BLM, USFWS, and Bureau of Reclamation (DOI 2009). ARARs must be attained by the remedial action pursuant to Section 121(d) of CERCLA, which assures protection of human health and the environment, and requires attainment of “legally applicable or relevant and appropriate standard(s), requirement(s), criteria, or limitation(s).” In fact, this is the fundamental project objective; namely, of achieving compliance with RAOs within a reasonable timeframe, as required by California State Water Board Resolution 92-49. The Project is the only feasible alternative that will achieve cleanup of the contaminated groundwater plume to background levels within a reasonable timeframe (See Section 1.8 of the Findings). Therefore, DTSC has made the policy determination to move

forward with the Project as it complies with the requirements that are ARARs in compliance with CERCLA as well as the requirements of California State Water Board Resolution 92-49.

Bring an Economic Benefit to Eastern San Bernardino County

Construction and treatment system start-up activities for the proposed Project would require a total of approximately 429 workers in the Project Area over multiple phases (80 workers for mobilization, 168 workers for Phase 1, and 181 workers for Phase 2) for an estimated period of 59 months (see Final SEIR, Volume 2, Table 3-10). It should be noted that the total number of workers could be reused for various phases of the 5-year construction phase of the Project. Project operation and maintenance would require approximately 11 full-time employees or full-time equivalents for routine operation and maintenance of the groundwater remedy throughout the life of the Project (an estimated 30 years of active remediation followed by 10 years of long-term monitoring and up to 20 years of arsenic monitoring). Decommissioning and removal of the IM-3 Facility and the Final Groundwater Remedy Project would require approximately 102 workers over a total of 27 months (refer to Section 4.5.3 for more detail). The employment of these additional workers and experts would provide an economic benefit to the region.

1.9.3 Conclusion

Each of the above considerations individually is sufficient to approve the Project. When viewed collectively as conjoined economic, social, health, environmental, and other considerations, and in light of the broad sweeping impact contamination to one of America's most important water supplies would have, the Project should be implemented notwithstanding the significant unavoidable adverse impacts to cultural resources and noise identified in the Final SEIR.

1.10 Mitigation Monitoring Reporting Program

CEQA Guidelines Section 21081.6 requires that when a public agency is making the Findings required by Section 21081, the public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval to mitigate or avoid significant effects on the environment. Because mitigation measures have been adopted to mitigate or avoid significant environmental effects of the project, an MMRP has been prepared for the Project and is adopted along with these Findings. The MMRP is attached to the Statement of Decision and Resolution of Approval for the Final Groundwater Remedy Project as **Exhibit 2**. DTSC will use the MMRP to track compliance with Project mitigation measures. The MMRP will remain available for public review during the compliance period.

1.11 References

California Department of Substances Control (DTSC). 2011 (January). *Final Environmental Impact Report for the Topock Compressor Station Groundwater Remediation Project*, Volumes 1 and 2, and additional supporting decision documents (Findings of Fact and MMRP).

California Department of Substances Control (DTSC). 2013 (August). *Topock Compressor Station Groundwater Remediation Project Environmental Impact Report Addendum No. 1 for Alternative Freshwater Source Evaluation Activities*.

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- CH2M HILL. 2008 (March). *Corrective Measures/Feasibility Study Work Plan, Topock Compressor Station, Needles, California.*
- . 2009 (December). *The Final Groundwater Corrective Measures Study/Feasibility Study Report for Solid Waste Management Units (SWMU) 1/Area of Concern (AOC) 1 and AOC 10 (Final CMS/FS). PG&E Topock Compressor Station, Needles, California.* Oakland, CA. Published by Pacific Gas and Electric Company, San Luis Obispo, CA.
- . 2013 (January). *Soil RCRA Facility Investigation/Remedial Investigation Work Plan, PG&E Topock Compressor Station, Needles, California, revised.*
- . 2015a (November). *Basis of Design Report/Final (100%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California.*
- . 2015b (November). *Construction/Remedial Action Work Plan for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California.*
- U.S. Department of the Interior (DOI). 2005 (July). *Final Executed Consent Agreement: Pacific Gas and Electric Company, Topock Compressor Station, Needles, California.*
- U.S. Department of the Interior (DOI). 2013. *Remedial Action/Remedial Design Consent Decree between the United States of America and Pacific Gas & Electric Company (Consent Decree)*, Case 5:13-cv-00074-VAP-OP, Document 5-1. Filed January 15, 2013.

Attachment 1

Table of Significant Impacts, Mitigation Measures, and CEQA Findings of Fact

TABLE OF SIGNIFICANT IMPACTS, MITIGATION MEASURES, AND CEQA FINDINGS OF FACT

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
Aesthetics			
IMPACT AES-1: Substantial Adverse Effects on Scenic Vistas. The proposed Project could introduce additional wells, roads, pipelines, and other associated infrastructure, including the Future Activity Allowance, which could have a substantial adverse effect on a scenic vista.	<p>Mitigation Measure AES-1: Substantial Adverse Effects on Scenic Vistas (Groundwater FEIR Measure with Revisions). The proposed Project, including the Future Activity Allowance, shall be designed and implemented to adhere to the design criteria presented below:</p> <ul style="list-style-type: none"> a) Existing mature plant specimens (i.e., medium- to large-sized trees, large or prominent shrubs, and tall predominately herbaceous) shall be protected in place during construction, operation, and decommissioning phases consistent with CUL-1a-5. The identification of plant specimens that are determined to be mature and retained shall occur as part of the design phase and mapped/identified by a qualified plant ecologist or biologist and integrated into the final design and project implementation consistent with CUL-1a-5. b) Revegetation of disturbed areas within the riparian vegetation along the Colorado River shall occur concurrently with construction operations. Plans and specifications for revegetation shall be developed by a qualified plant ecologist or biologist before any riparian vegetation is disturbed and shall be implemented consistent with CUL-1a-5. The revegetation plan shall include specification of maintenance and monitoring requirements, which shall be implemented for a period of 5 years after project construction or after the vegetation has successfully established, as determined by a qualified plant ecologist or biologist. c) Plant material shall be consistent with surrounding native vegetation. d) The color of the wells, pipelines, reagent storage tanks, control structures, and utilities shall consist of muted, earth-tone colors that are consistent with the surrounding natural color palette. Matte finishes shall be used to prevent reflectivity. Integral color concrete should be used in place of standard gray concrete. e) The final revegetation plans and specifications shall be reviewed and approved by an architect, landscape architect, or allied design professional licensed in the State of California to ensure that the aesthetic mitigation design objectives and criteria are being met. Planting associated with biological mitigation may contribute to, but may not fully satisfy, visual mitigation. f) The requirements of the <i>Aesthetics and Visual Resources Protection and Revegetation Plan</i> (C/RAWP Appendix N) shall be implemented throughout the construction, operation and maintenance, and decommissioning phases of the Project, including but not limited to replacement planting procedures (see Section 4.3), maintenance and adaptive management (see Section 5.2), and photo-monitoring (see Section 5.3). These measures apply to new Project components added as 	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this significant environmental effect as identified in the Final SEIR. (CEQA Guidelines, § 15091, subd. (a)(1).)</p> <p>Facts in Support of Finding: Implementation of Mitigation Measure AES-1 would reduce the potentially adverse effect on a scenic vista associated with the Project. Although certain elements of the Project would remain visible, incorporating design elements that are consistent with the surrounding natural color palette, as well as plant preservation and revegetation, would blend Project infrastructure into the visual setting and would reduce the overall contrast of the Project to a less than significant level. (Final SEIR Volume 2, pg. 4.1-80 to 4.1-81)</p>

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	part of the Future Activity Allowance, should they be visible from Key View 5 or any of the other key views identified in the SEIR.		
IMPACT AES-2: Substantial Damage to Scenic Resources within a Scenic Corridor. The proposed Project could introduce new features in the Colorado River floodplain, at the TCS Evaporation Ponds, and near the existing HNWR-1A well site in Arizona that could adversely impact scenic resources within a scenic corridor.	Mitigation Measure AES-2: Substantial Damage to Scenic Resources within a Scenic Corridor (Groundwater FEIR Measure with Revisions). The proposed Project shall be implemented to adhere to the design criteria presented below and the Future Activity Allowance, if needed, shall be designed and implemented to adhere to the design criteria below: <ul style="list-style-type: none"> a) A minimum setback requirement of 20 feet from the water (ordinary high water mark or OHWM) shall be enforced, except with regard to any required river intake facilities, to prevent substantial vegetation removal along the river bank. b) Existing mature plant specimens (i.e. medium- to large-sized trees, large or prominent shrubs, and tall predominately herbaceous plants) shall be protected in place during construction, operation, and decommissioning phases. The identification of plant specimens that are determined to be mature and retained shall occur as part of the design phase and mapped/identified by a qualified plant ecologist or biologist and integrated into the final design and project implementation consistent with CUL1a-5. c) Revegetation of disturbed areas within the riparian vegetation along the Colorado River shall occur concurrently with construction operations. Plans and specifications for revegetation shall be developed by a qualified plant ecologist or biologist before any riparian vegetation is disturbed. The revegetation plan shall include specification of maintenance and monitoring requirements, which shall be implemented for a period of 5 years after project construction or after the vegetation has successfully established, as determined by a qualified plant ecologist or biologist. d) Plant material shall be consistent with surrounding native vegetation. e) The color of the wells, pipelines, reagent storage tanks, control structures, and utilities shall consist of muted, earth-tone colors that are consistent with the surrounding natural color palette. Matte finishes shall be used to prevent reflectivity. Integral color concrete should be used in place of standard gray concrete. f) The final revegetation plans and specifications shall be reviewed and approved by an architect, landscape architect, or allied design professional licensed in the State of California to ensure that the aesthetic mitigation design objectives and criteria are being met. Planting associated with biological mitigation may contribute to, but may not fully satisfy, visual mitigation. g) The requirements of the <i>Aesthetics and Visual Resources Protection and Revegetation Plan</i> (C/RAWP Appendix N) shall be implemented throughout the construction, operation and maintenance, and decommissioning phases of the Project, including but not limited to 	Less than Significant	Finding: DTSC finds that changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this significant environmental effect as identified in the Final SEIR. (CEQA Guidelines, § 15091, subd. (a)(1).) Facts in Support of Finding: Implementation Mitigation Measure AES-2 would reduce the overall change to the visual character of the view corridor along the Colorado River associated with features in the Colorado River floodplain, the TCS Evaporation Ponds, near the existing HNWR-1A well site in Arizona, and to the general Future Activity Allowance locations to the extent such locations are reasonably foreseeable at this time. Although the Project would still be visible, incorporating design elements that are consistent with the surrounding natural color palette, as well as plant preservation and revegetation, would blend the Project into the visual setting within the floodplain and would reduce the overall visual contrast of the Project to a less than significant level. (Final SEIR Volume 2, pg. 4.1-85- 4.1-87)

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	replacement planting procedures (see Section 4.3), maintenance and adaptive management (see Section 5.2), and photo-monitoring (see Section 5.3). These measures apply to new Project components added as part of the Future Activity Allowance, should they be visible from Key View 11 or any of the other key views identified in the SEIR.		
Air Quality and Greenhouse Gas Emissions			
IMPACT AIR-1: Short-term Construction-Related Emissions of Criteria Pollutants and Precursors. The proposed Project could violate the MDAQMD air quality standards for NO _x during construction activities.	<p>Mitigation Measure AIR-1: Short-Term Construction-Related Emissions of Criteria Air Pollutants (Groundwater FEIR Measure). PG&E shall implement the fugitive dust control measures below for any construction and/or demolition activities:</p> <ul style="list-style-type: none"> • Use periodic watering for short-term stabilization of disturbed surface area to minimize visible fugitive dust emissions during dust episodes. Use of a water truck to maintain moist disturbed surfaces and actively spread water during visible dusting episodes shall be considered sufficient; • Cover loaded haul vehicles while operating on publicly maintained paved surfaces; • Stabilize (using soil binders or establish vegetative cover) graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than 30 days, except when such delay is caused by precipitation that dampens the disturbed surface sufficiently to eliminate visible fugitive dust emissions; • Cleanup project-related track out or spills on publicly maintained paved surfaces within twenty-four hours; and • Curtail nonessential earth-moving activity under high wind conditions (greater than 25 miles per hour) or develop a plan to control dust during high wind conditions. For purposes of this rule, a reduction in earth-moving activity when visible dusting occurs from moist and dry surfaces due to wind erosion shall be considered sufficient to maintain compliance. <p>Mitigation Measure AIR-1a: Short-Term Construction-Related Emissions of Criteria Air Pollutants and Precursors (New Measure). PG&E's construction contractor shall ensure that all off-road equipment with a horsepower greater than 50 horsepower have USEPA certified Tier 4 interim engines or engines that are certified to meet or exceed the NO_x emission ratings for USEPA Tier 4 engines. This measure excludes specialty construction equipment where Tier 4 interim engines cannot currently be obtained within the industry, or older equipment cannot be retrofitted to meet Tier 4 emissions standards. During construction and decommissioning, the construction contractor shall maintain a list of all operating equipment in use on the Project site. The construction equipment list shall state the makes, models, and numbers of construction equipment on-site. For specialty</p>	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this significant environmental effect as identified in the Final SEIR. (CEQA Guidelines, § 15091, subd. (a)(1).)</p> <p>Facts in Support of Finding: Implementation of the Mitigation Measure AIR-1 and AIR-1a would reduce fugitive dust (PM₁₀) emissions by a minimum of 75 percent. Thus, post mitigation PM₁₀ emissions would be substantially reduced to below MDAQMD's threshold of 82 lb/day. With implementation of required fugitive dust controls, the impact after mitigation is reduced to a less than significant level for PM₁₀. Implementation of the dust control measures including the use of Tier-4 equipment would reduce NO_x emissions to a less than significant level. (Final SEIR Volume 2, pg. 4.2-41- 4.2-42).</p>

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	equipment where Tier 4 interim engines are not available, documentation supporting this conclusion shall be included in the equipment files. Once Tier 4 equipment is available for a piece of specialty equipment, it shall be incorporated into the construction fleet, replacing the existing non-Tier 4 piece of equipment. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to five minutes or less in compliance with California Air Resources Board's Rule 2449.		
Impact AIR-2: Result in a Cumulatively Considerable Net Increase. The proposed Project could result in a cumulatively considerable net increase in criteria pollutant emissions with respect to NO _x emissions during construction activities.	Implementation of Mitigation Measure AIR-1a.	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project, which avoid or substantially lessen this significant environmental effect as identified in the Final SEIR. (CEQA Guidelines, § 15091, subd. (a)(1).)</p> <p>Facts in Support of Finding: Implementation of the dust control measures including use of Tier 4 equipment through Mitigation Measure AIR-1a would reduce NO_x emissions to a less than significant level. (Final SEIR Volume 2, pg. 4.2-41-4.2-42).</p>
Biological Resources			
IMPACT BIO-1: Potential Fill of Wetlands and Other Waters of the United States/California, and Disturbance or Removal of Riparian Habitat. Implementation of the proposed Project could result in disturbance to ephemeral waters under USACE and CDFW jurisdiction.	<p>Mitigation Measure BIO-1: Potential Fill of Wetlands and Other Waters of the United States and Disturbance or Removal of Riparian Habitat (Measure Completed – no longer applicable).</p> <p>Mitigation Measure BIO-1a: No-net-loss of Jurisdictional Wetlands/Waters Function or Value (New Measure). Unavoidable direct impacts to jurisdictional areas shall be documented by a wetland specialists or Field Contact Representative (FCR) during implementation of the proposed Project. To document unavoidable direct impacts, the extent of work areas near jurisdictional areas shall be delineated in the field using GPS technology and pre- and post-impact conditions of jurisdictional areas documented with photographs. The nature of construction within work areas shall also be described, including the Project facilities installed, equipment utilized, and duration of construction activities. Documentation of unavoidable impacts shall be submitted to CDFW and DTSC to ensure adequate mitigation is provided consistent with the requirements below.</p> <p>Unavoidable direct impacts to non-disturbed jurisdictional ephemeral waters (estimated at up to approximately 1.61 acres including direct impacts resulting from planned facilities and additional facilities constructed under the Future Activity Allowance) shall be mitigated to ensure no-net-loss of function or value. Mitigation shall include both (a) and (b) detailed below. Mitigation for ground disturbance associated with restoration and enhancement activities shall not be required.</p>	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this significant environmental effect as identified in the Final SEIR. (CEQA Guidelines, § 15091, subd. (a)(1).)</p> <p>DTSC also find that such changes or alterations are within the responsibility and jurisdiction of other public agencies (such as CDFW, USFWS, and DOI) and not the agency (DTSC) making the finding. Such changes have been adopted by such other agencies or can and should be adopted by such other agencies. (CEQA Guidelines, § 15091, subd. (a)(2).)</p> <p>Facts in Support of Finding: Avoidance of impacts to ephemeral waters under USACE and CDFW jurisdiction would occur through implementation of habitat restoration plans as described in Mitigation Measures BIO-1a and BIO-1b. Using these measures, revegetation is expected to occur naturally within one to two growing seasons ensuring a no-net-loss of habitat value or function within this timeframe. This would reduce impacts on sensitive habitats to a less than significant level. (Final SEIR Volume 2, pg. 4.3-72 to 4.2-74.)</p>

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	<p>a) In-place restoration of jurisdictional areas directly impacted by construction at a 1:1 ratio (i.e., 1 acre of restoration for each acre of direct impact to non-disturbed jurisdictional area) shall occur in accordance with the <i>Havasu National Wildlife Refuge Habitat Restoration Plan</i> (Appendix G to the C/RAWP (CH2M Hill 2015b)) and <i>Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats</i> (Appendix O to the C/RAWP (CH2M Hill 2015b)). In-place restoration of areas directly impacted during construction will occur in two phases. The first phase will involve restoration within the areas directly impacted by construction where it will not interfere with continued operation and maintenance of the proposed Project (e.g., restoration of temporary construction work areas). The first phase of restoration shall begin within 1 year of completing construction. The second phase will involve restoration of areas that will be occupied by Project facilities to occur following decommissioning of the proposed Project. Restoration of jurisdictional areas following decommissioning of the proposed Project will be guided by a Final Habitat Restoration Plan (refer to Mitigation Measure BIO-1b).</p> <p>b) To address temporal loss of jurisdictional areas directly impacted by construction, PG&E shall provide compensatory mitigation at a minimum 2:1 ratio (2 acres of compensation for each acre of direct impacts to non-disturbed jurisdictional area). Compensatory mitigation to address temporal loss shall be agreed upon with CDFW prior to the start of construction, involve the same amount and quality of jurisdictional area(s) disturbed, and include one or more of the following approaches: 1) acquisition and preservation in perpetuity; 2) restoration; and/or 3) enhancement. Acquisition and preservation may include establishment of a conservation easement or purchase of credits from a CDFW- and/or USACE -approved mitigation banking program, or compliance with an applicable CDFW and/or USACE-approved in-lieu fee program. Restoration may include conversion of non-wetland habitat to functioning wetland habitat. Enhancement may include removal of non-native species in existing wetland habitat. As summarized in the technical memorandum, <i>Assessment of Proposed Mitigation Planting Areas for Final Groundwater Remedy Impacts</i>, included as Appendix V to the C/RAWP (CH2M Hill 2015b), PG&E has identified restoration areas within the historical floodplain of the Colorado River. The historical floodplain no longer functions as a riparian habitat with hydrologic connectivity to the river; therefore, restoration in the historical floodplain may qualify as compensatory mitigation to address temporal loss if hydrologic function can be restored. PG&E shall prepare a mitigation plan prior to the start of construction to specify methodology, criteria for meeting the 2:1 mitigation requirement, and monitoring and reporting for compensatory mitigation. The plan shall be subject to CDFW approval and in conformance with the identified performance standards, and submitted to DTSC, BLM, BOR, USFWS, DOI, Interested Tribes, and other appropriate landowners for review and</p>		

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	<p>comment within 60 days prior to finalization, as appropriate based on location of impacts.</p> <p>Restoration of jurisdictional areas within the Project Area shall be guided by the <i>Havasu National Wildlife Refuge Habitat Restoration Plan</i> (Appendix G to the C/RAWP [CH2M Hill 2015b]) and <i>Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats</i> (Appendix O to the C/RAWP [CH2M Hill 2015b]), as approved by CDFW, USFWS, and DOI. Implementation of these plans will be informed by the technical memorandum, <i>Assessment of Proposed Mitigation Planting Areas for Final Groundwater Remedy Impacts</i>, included as Appendix V to the C/RAWP (CH2M Hill 2015b), which provides preliminary information on the condition within fourteen proposed mitigation planting areas.</p> <p>The habitat restoration plans also specify on-site restoration success criteria, monitoring and reporting requirements, and adaptive management guidelines for salvage and replanting of trees, shrubs, and perennial species. In accordance with the habitat restoration plans, removal of riparian trees (e.g., palo verde trees) shall be replaced at a 3:1 ratio (i.e., planting 3 trees in restoration areas for each tree removed during construction). The success criteria for mitigation plantings shall be a final minimum plant replacement ratio of 2.25:1 (75% overall survival rate) of mitigation plantings at the end of a minimum 5-year monitoring period. Adaptive management guidelines outline modifications to restoration approaches, as appropriate, to ensure successful establishment of native vegetation and desired density of cover of plants. As required by the plans, the following adaptive management actions shall be implemented if success criteria are not being met: weed control, irrigation modification, herbivory protection, and additional plantings. Reporting to DTSC, CDFW, and USFWS shall be completed within 90 days of completing each monitoring year.</p> <p>The habitat restoration plans also specify design and construction avoidance and minimization measures, including:</p> <ul style="list-style-type: none"> • Locating pipelines, wells, and staging and storage areas along roadways, pipeline rights-of-way, and other previously disturbed areas to avoid impacts to vegetation to the extent feasible. • Performing pre-activity surveys prior to ground disturbance to identify and demark with flagging, fencing, and/or signage areas of native vegetation and sensitive habitats in the immediate vicinity of the construction areas. • Providing construction workers with environmental awareness training regarding biological resources including sensitive species and habitats. <p>Mitigation Measure BIO-1b: Final Remedy Restoration Plan (New Measure). A Final Habitat Restoration Plan shall be developed and implemented following decommissioning of the proposed Project. The Final Restoration Plan will address restoration of areas that were impacted during construction, operation and maintenance, and decommissioning of the</p>		

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	<p>proposed Project, specifying salvage/replanting measures, as well as success criteria, monitoring, and adaptive management requirements for restored areas. Success criteria for restoration areas will be similar to that identified in the existing habitat restoration plans (i.e., 75% overall survival rate of mitigation plantings at the end of a minimum 5-year monitoring period). Adaptive management actions to ensure successful establishment of native vegetation and desired density of cover of plants will include weed control, irrigation modification, herbivory protection, and additional plantings. The plan shall be submitted to DTSC, CDFW, BLM, BOR, USFWS, DOI, and other appropriate landowners for review. The Final Remedy Restoration Plan shall also be provided to Interested Tribes for review and comment, consistent with Mitigation Measure CUL-1a-16.</p>		
<p>IMPACT BIO-2: Direct Disturbance of and Loss of Habitat for Special-Status Birds, Desert Tortoise, Ring-Tailed Cat, Nelson's Bighorn Sheep, Special-Status Bats, Northern Mexican Gartersnake, and Special-Status Plants. Implementation of the proposed Project could affect special-status species either directly or through habitat modifications.</p>	<p>Mitigation Measure BIO-2a: Disturbance of Special-Status Birds and Loss of Habitat (Groundwater FEIR Measure with Revisions). The proposed Project has been designed to minimize removal of habitat for special-status birds. Impact avoidance and minimization measures required by the BIAMP shall be implemented (refer to Appendix S of the C/RAWP [CH2M Hill 2015b]). Avoidance and minimization measures required by the BIAMP include prohibiting construction near or in special-status bird habitat; limiting construction during the breeding seasons; requiring an on-site biological monitoring during field activities; implementing buffers around active nests to the extent practical and feasible to limit noise and visual disturbances; and conducting worker awareness training and monitoring to assess the activity effect, ambient activities, site conditions, and bird behavior to determine the efficacy of nest avoidance buffers.</p> <p>Mitigation Measure BIO-2b: Disturbance of Desert Tortoise and Loss of Habitat (Groundwater FEIR Measure with Revisions). To the extent feasible, project construction (including planned facilities and those potentially constructed as part of the Future Activity Allowance) shall be designed to minimize removal of habitat for the desert tortoise. Before any ground-disturbing project activities begin, a qualified desert tortoise biologist shall identify potential desert tortoise habitat in areas that could be affected. Through coordination with the designated qualified biologist, PG&E shall ensure that the footprints of Project elements and construction zones, staging areas, and access routes are designed to avoid direct or indirect effects on potential desert tortoise habitat to the extent feasible. Through coordination with the designated qualified biologist, PG&E shall ensure that the footprints of Project facilities and construction zones, staging areas, and access routes are designed to avoid direct or indirect effects on potential desert tortoise habitat to the extent feasible. In areas where impacts to potential desert tortoise habitat are unavoidable, measures outlined in the PBA and in the USFWS letter concurring with the PBA, shall be implemented, as described below.</p> <p>A qualified desert tortoise biologist shall conduct pre-activity desert tortoise clearance surveys immediately prior to activities that would result in unavoidable impacts to tortoise habitat. The pre-activity survey will occur</p>	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this significant environmental effect as identified in the Final SEIR (CEQA Guidelines, § 15091, subd. (a)(1).)</p> <p>DTSC also finds that such changes or alterations are within the responsibility and jurisdiction of other public agencies (such as CDFW, USFWS, BLM, BOR, DOI) and not the agency (DTSC) making the finding. Such changes have been adopted by such other agencies or can and should be adopted by such other agencies. (CEQA Guidelines, § 15091, subd. (a)(2).)</p> <p>Facts in Support of Finding: Implementation of the Project could result in the direct disturbance of and loss of habitat for special-status birds, desert tortoise, ring-tailed cat, Nelson's Bighorn Sheep, special-status bats, Northern Mexican Gartersnake, and special-status plants. Implementation of mitigation measures BIO-2a through BIO-2h consist of pre-construction surveys by a qualified biologist with species-specific experience, avoidance of avian breeding seasons and maternity roosting seasons for bats, and restoration of disturbed areas. Mitigation measures identified in BIO-2a through BIO-2h will reduce the impact on special-status birds, desert tortoise, ring-tailed cat, Nelson's Bighorn Sheep, special-status bats, Northern Mexican Gartersnake, and special-status plants to a less than significant level. (Final SEIR Volume 2, pp. 4.3-109 - 4.3-118).</p>

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	<p>immediately prior to ground-disturbance. If feasible, the preconstruction desert tortoise surveys would coincide with one of the two peak periods of desert tortoise activity (i.e., if feasible, the surveys should be conducted in either the period from April through May, or from September through October). Otherwise, pre-activity clearance surveys shall be in full accordance with the substantive requirements of USFWS protocols. Any desert tortoise burrows and pallets outside of, but near, work areas shall be flagged so that they may be avoided during work activities. At conclusion of work activities, all flagging shall be removed. Should any live tortoises be found during the clearance survey, or if a tortoise moves into the work area, all work shall stop immediately and the animal shall be left to move out of the work area on its own accord. To the extent feasible, tortoises shall not be handled. PG&E will have a USFWS-approved desert tortoise handler available if and when a tortoise requires active relocation. USFWS shall be contacted prior to handling any live tortoises. All encounters of desert live desert tortoises shall be reported to USFWS, BLM, CDFW, and DTSC. Information to be reported will include for each individual: the location (narrative, vegetation type, and maps) and date of observation; general conditions and health; any apparent injuries and state of healing; and diagnostic markings.</p> <p>PG&E shall designate a field contact representative (FCR) who will be responsible for overseeing compliance with proper execution of the mitigation measures. The FCR will be on-site during implementation of all ground disturbing activities. The FCR shall be trained by the qualified desert tortoise biologist and have authority to halt activities that are in violation of the mitigation measures/or pose a danger to listed species. The FCR will have a copy of the mitigation measures and may be a project manager, PG&E representative, or qualified biologist. All employees and contractors shall be required to attend a worker awareness training prior to working on the proposed Project. The FCR shall maintain record of all employees and contractors who have completed the worker awareness training.</p> <p>USFWS may identify additional conservation measures should Project plans change, or if new information regarding the distribution or abundance of desert tortoise becomes available. PG&E shall implement any additional conservation measures identified by USFWS through the Section 7 consultation process.</p> <p>Mitigation Measure BIO-2c: Disturbance of Special-Status Species and Loss of Habitat Caused by Decommissioning (Groundwater FEIR Measure with Revisions). To avoid impacts on special-status species that may occur within the project area as a result of decommissioning activities, an Avoidance and Minimization Plan shall be developed and implemented through consultation with CDFW, BLM, and USFWS. The Avoidance and Minimization Plan will specify species-specific measures, including seasonal restrictions for decommissioning activities (i.e., avoidance of the avian breeding season and maternity roosting season for bats where habitat exists) as needed, as well as avoidance buffers around known locations of special-</p>		

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	<p>status species or their habitats. Avoidance and minimization measures identified in the plan shall be based on surveys conducted prior to decommissioning, and during the breeding season (as previously defined in the Groundwater FEIR for each species or suite of species). To the extent appropriate, the Avoidance and Minimization Plan for decommissioning activities will include applicable measures identified in the existing BIAMP and PBA. Restoration of any disturbed areas shall include measures to achieve no net loss of habitat functions and values existing before project implementation. These measures shall be achieved by developing and implementing a Final Restoration Plan (refer to Mitigation Measure BIO-1b). The plan shall include a revegetation seed mix or plantings design, a site grading concept plan, success criteria for restoration, a monitoring plan for achieving no net loss of habitat values and functions, and an adaptive management plan. Success criteria for restoration areas will be similar to that identified in the existing habitat restoration plans (i.e., 75% overall survival rate of mitigation plantings at the end of a minimum 5-year monitoring period). Adaptive management actions to ensure successful establishment of native vegetation and desired density of cover of plants will include weed control, irrigation modification, herbivory protection, and additional plantings. The Final Remedy Restoration Plan shall be submitted to DTSC, CDFW, BLM, BOR, USFWS, DOI, and other appropriate landowners for review. The Final Remedy Restoration Plan shall also be provided to Interested Tribes for review and comment, consistent with Mitigation Measure CUL-1a-16.</p> <p>Mitigation Measure BIO-2d: Disturbance to Ring-Tailed Cat Individuals and Habitat (New Measure). The following measures shall be implemented to avoid and minimize impacts to ring-tailed cat:</p> <ol style="list-style-type: none"> Pre-activity surveys for ring-tailed cats shall be conducted by a qualified biologist with species-specific experience prior to the start of ground disturbing activities (including during construction, operation and maintenance, and decommissioning phases) where suitable denning habitat is present. No activities that will result in disturbance to dens or individual ring-tailed cats will proceed prior to completion of the surveys. If no active dens are found, no further action is needed. If a ring-tailed cat den is present, additional measures shall be implemented as outlined below, and the CDFW shall be notified of any active dens within the proposed disturbance area. If an active ring-tailed cat den is found during pre-activity surveys, Project facilities that may result in direct impacts to the active den shall be reconfigured to avoid the loss of the den if feasible. If Project facilities cannot be modified to avoid a den, activities with the potential to disturb the den shall cease and CDFW shall be contacted immediately. If approved by CDFW, demolition of the den site shall commence only outside of the breeding season (February 1 to August 30) when the den has been confirmed to be vacated. If an occupied non-breeding den is found in an area scheduled to be impacted, prior 		

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	<p>to disturbance, the CDFW shall be notified to review and approve the proposed procedures to ensure that no take of the species occurs as a result of the action. Areas with unoccupied dens that need to be removed shall first be disturbed at dusk, just prior to removal that same evening, to allow adult ring-tailed cats to escape during the darker hours.</p> <p>Mitigation Measure BIO-2e: Disturbance of Nelson's Bighorn Sheep (New Measure). If a Nelson's bighorn sheep is observed during ground-disturbing activities (including during construction, operation and maintenance, and decommissioning phases), work within 125 feet of individuals shall be halted (CDFW 2016). Project activities can recommence after the bighorn sheep moves more than 125 feet away on its own. If proximity of Nelson's bighorn sheep to a proposed construction area may result in construction delays, PG&E shall contact CDFW prior to proceeding with ground disturbing activities to determine an appropriate course of action.</p> <p>Mitigation Measure BIO-2f: Disturbance or Loss of Special-status Bat Species (New Measure). Bats occupying Roost 9 (refer to Figure 4.3-7) shall be safely excluded after the maternity season (which ends August 31) and before bats go into hibernation or torpor (which begins October 31) through the use of a one-way door. Exclusion of bats shall be performed by a biologist holding a Memorandum of Understanding from CDFW to handle bats in California or a biologist otherwise licensed by the State of California to do so. After bats are safely excluded, fast drying foam shall be used to fill the void to prevent bats from re-entering the cavity.</p> <p>To the extent possible, ground disturbance within proximity of suitable maternity roosting habitat for special-status bat species as shown in Figure 4.3-7 should occur outside the maternity season (March 15 through August 31). If activities critical to meeting the Project objectives are determined necessary during the maternity season, measures (i) through (v) below will be implemented. Measures (i) through (v) are not required for activities implemented outside the maternity season.</p> <ol style="list-style-type: none"> i. High- and low-frequency noise disturbance shall be minimized by establishing avoidance buffers around known roost locations. Required buffer distance will vary by roost site and noise source. Table 4.3-5 provides buffer requirements for known roosting sites and noise source. Note, vehicles and heavy equipment may travel under the railroad bridges on National Trails Highway as these vehicles are generally moving quickly and are not expected to create much frequency noise while passing under the bridges. ii. To minimize potential effects to bats during nighttime activities, the Project must reduce or eliminate light levels at night. If artificial lighting at night is needed, floodlights shall be adjusted so that the angle of the beam is less than 70 degrees and directed away from roost sites. All nighttime lights shall be directed downward if possible. If 		

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	<p>lighting is required for minimum safety and security purposes, light barriers shall be used to reduce the potential for light to reach roosts. For example, if lights are needed to ensure safety of a work area, the light could be positioned so that a hillside blocks the light reaching the roosts sites. Smaller barriers, such as plywood sheeting, can be used, but lighting shall not surround a roost within the given buffer zones. Lights with high blue-white or ultraviolet content shall be avoided. When using nighttime lighting a buffer of 250 feet shall be maintained between every light source near roost sites 2 through 9, and a buffer of 400 feet shall be maintained near roost sites 1 and 10 (Table 4.3-5).</p> <p>iii. To minimize effects of increased human activities, pedestrians shall not approach active roosts during the maternity season, and a 65-foot buffer shall be maintained between roosts and foot traffic.</p> <p>iv. To minimize air quality degradation near roosts, stationary heavy equipment vehicles, large generators, and large idling trucks producing diesel exhaust shall not operate for more than 2 minutes within 250 feet of a bat roost (Table 4.3-5). Vehicles shall not idle their engine while under a bridge.</p> <p>v. A biological monitor shall be on-site during ground disturbing activities within proximity of roosts to ensure avoidance and minimization measures (including avoidance buffers) are properly implemented.</p> <p>Because roosting bats, including maternity colonies, switch roosts especially on a season-by-season basis, roost locations shall be identified by a qualified biologist specializing in bats at least once each for the spring and summer periods of the maternity season once every 3 years. Additionally, because western red bats could potentially breed in the large tamarisk groves located in Arizona, acoustic surveys for a minimum of three consecutive nights during fair weather (above 50 degrees Fahrenheit, no rain or high winds) during the summer maternity season shall occur once every 3 years. If western red bats are recorded acoustically, an attempt to locate active roost sites shall occur to establish appropriate buffer zones around each roost. If known roost sites do not change locations after three sets of surveys (over the course of 9 years) roosts shall be surveyed for spring and summer periods once every 5 years thereafter. Avoidance and minimization measures described (i) through (v) shall be implemented when activities are planned near newly discovered roosting locations between March 15 and August 31.</p>		

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	<div>TABLE 4.3-5 BAT ROOST BUFFER DISTANCES PER EQUIPMENT CATEGORY¹</div> <table><tr><th rowspan="2">Roost Site</th><th colspan="6">Buffer Distance (feet) by Equipment Category²</th></tr><tr><th>Construction Trucks and Heavy Equipment</th><th>Small Vehicles</th><th>Drilling, Trenching, and Light Equipment</th><th>Light Source</th><th>Pedestrian Traffic and Water Sampling Equipment</th><th>Stationary Diesel Sources > 2 minutes</th></tr><tr><td>1</td><td>120</td><td>90</td><td>150</td><td>400</td><td>65</td><td>250</td></tr><tr><td>2</td><td>90</td><td>65</td><td>150</td><td>250</td><td>65</td><td>250</td></tr><tr><td>3</td><td>90</td><td>65</td><td>150</td><td>250</td><td>65</td><td>250</td></tr><tr><td>4</td><td>90</td><td>65</td><td>150</td><td>250</td><td>65</td><td>250</td></tr><tr><td>5</td><td>90</td><td>65</td><td>150</td><td>250</td><td>65</td><td>250</td></tr><tr><td>6</td><td>90</td><td>65</td><td>150</td><td>250</td><td>65</td><td>250</td></tr><tr><td>7</td><td>90</td><td>65</td><td>150</td><td>250</td><td>65</td><td>250</td></tr><tr><td>8</td><td>90</td><td>65</td><td>150</td><td>250</td><td>65</td><td>250</td></tr><tr><td>9</td><td>90</td><td>65</td><td>150</td><td>250</td><td>65</td><td>250</td></tr><tr><td>10</td><td>90</td><td>65</td><td>150</td><td>250</td><td>65</td><td>250</td></tr><tr><td>Hypothetical Townsend's big-eared bat roost</td><td>400</td><td>200</td><td>200</td><td>400</td><td>200</td><td>250</td></tr></table> <div><p>¹ Roost buffers shall be implemented when ground disturbing activities are scheduled to occur during the maternity season (March 15 through August 31). Roost buffers are not needed for activities occurring outside the maternity season.</p><p>² Equipment Categories (see Appendix BOD for more detail):</p><p><u>Construction Trucks and Heavy Equipment/Stationary Diesel Exhaust Sources:</u> e.g., dump trucks, 18-wheeled flatbed trucks, front-end loaders, water trucks.</p><p><u>Small Vehicles:</u> e.g., pick-up trucks, UTVs.</p><p><u>Drilling, Trenching, and Light Equipment:</u> e.g., excavators, backhoes, road graders, drill rigs, trenching machines.</p><p><u>Pedestrian Traffic and Water Sampling Equipment:</u> e.g., hand tools, water quality instruments.</p><p>Source: H.T. Harvey & Associates 2016</p></div> <div>Mitigation Measure BIO-2g: Disturbance of Northern Mexican Gartersnake (New Measure). The following measures, as detailed in the USFWS Concurrence Letter (USFWS, 2017), shall be implemented for activities undertaken within 600 feet of potential northern Mexican gartersnake habitat at the southern end of Topock Marsh in Arizona. These measures are additional to the general measures required by Section 3.4 of the PBA (included as Appendix U to the C/RAWP).</div>	Roost Site	Buffer Distance (feet) by Equipment Category ²						Construction Trucks and Heavy Equipment	Small Vehicles	Drilling, Trenching, and Light Equipment	Light Source	Pedestrian Traffic and Water Sampling Equipment	Stationary Diesel Sources > 2 minutes	1	120	90	150	400	65	250	2	90	65	150	250	65	250	3	90	65	150	250	65	250	4	90	65	150	250	65	250	5	90	65	150	250	65	250	6	90	65	150	250	65	250	7	90	65	150	250	65	250	8	90	65	150	250	65	250	9	90	65	150	250	65	250	10	90	65	150	250	65	250	Hypothetical Townsend's big-eared bat roost	400	200	200	400	200	250		
Roost Site	Buffer Distance (feet) by Equipment Category ²																																																																																												
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	<ol style="list-style-type: none"> Workers shall exercise caution when traveling near potential gartersnake habitat along the southern margin of Topock Marsh. During the most-active season for northern Mexican gartersnakes (February 1st to November 30th), workers will not exceed 10 mph when traveling off-road to maximize the likelihood that gartersnakes would be seen and avoided by drivers. During the inactive season (December 1st to January 31st) workers will not exceed 25 mph when traveling off-road. Construction personnel will abide by the posted speed limit while traveling on the Oatman-Topock Highway. Work will stop if a gartersnake is found within the immediate area to be disturbed and the gartersnake will be allowed to leave the site on its own volition. A qualified biologist shall perform preconstruction surveys prior to ground disturbing activities with the intention of identifying potential microhabitat sites (artificial or natural cover such as debris, wood, or rock piles, wildcat dump sites, high rodent burrow densities, etc.) favorable to gartersnakes in the disturbance area to focus search effort for potential gartersnakes. When possible, ground disturbing activities should be avoided when snakes may be inactive and underground, in order to avoid injury to snakes. Construction will be completed when the northern Mexican gartersnake is active (February 1st through November 30th). Material stockpiles located near the southern margin of Topock Marsh shall be limited to designated storage areas that are more than 600 feet from potentially suitable northern Mexican gartersnake habitat or on the opposite side of the Oatman Highway. All open holes and trenches shall be inspected for trapped gartersnakes at the beginning, middle, and end of the work day, at a minimum. During excavation of trenches and to the extent possible, earthen ramps or wooden planks shall be provided to facilitate the escape of any wildlife species that may inadvertently become entrapped and to leave the site on its own volition (adapted from General Project Management Measure Number 17 of the PBA [Appendix U to the C/RAWP (CH2M Hill 2015b)]). <p>Mitigation Measure BIO-2h: Disturbance of Special-Status Plants (New Measure). To reduce potential construction-related impacts to populations of mousetail suncup and other potentially occurring special-status plant species, at least one pre-construction survey shall be conducted prior to the start of any ground-disturbing activities in areas of suitable habitat. The survey shall be conducted in areas where construction is planned and during the blooming period of those species which are either known to occur or likely to occur in the area (i.e., generally March through May but dependent on rainfall patterns). The survey shall be conducted by a qualified botanist skilled at identification of the plant species in the region. The qualified botanist shall determine where pre-construction surveys are required based on existing</p>		

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	<p>habitat conditions. The locations of identified special-status plants shall be flagged and mapped using GPS, and a construction avoidance buffer of at least 50 feet where possible shall be established at identified locations to ensure no direct or indirect impacts occur. If the work cannot be conducted outside of the 50-foot buffer, the qualified botanist will identify construction limits and access routes that avoid impacts to known plants. PG&E shall not proceed with ground-disturbing activities that may adversely impact areas within 50 feet of special-status plants without first conferring with CDFW.</p> <p>To the maximum extent feasible, additional Project facilities to be constructed under the Potential Future Activity Allowance shall be sited to avoid suitable habitat for special-status plant species. If additional Project facilities to be constructed under the Potential Future Activity Allowance cannot be sited to avoid suitable habitat, one of the following measures shall apply.</p> <ul style="list-style-type: none"> Assume suitable habitat is occupied by special-status plant species and provide mitigation (as prescribed in (i) through (iii) below); or Verify absence or avoidance of individuals by performing focused presence/absence surveys within the suitable habitat to be impacted. Verification of presence/absence shall require data from at least 2 years of focused surveys within the previous 5 years. Focused presence/absence surveys shall be performed by a qualified botanist during the blooming period of potentially occurring species (i.e., generally March through May but dependent on rainfall patterns). If special-status plant species are observed and avoidance cannot be achieved, mitigation shall be provided (as prescribed in (i) through (iii) below). <p>Results of all surveys performed following construction of the Proposed Project shall be incorporated onto a comprehensive map of suitable habitat and known rare plant populations within the Project Area.</p> <p>As noted above, if disturbance within 50 feet of a special-status plant species cannot be avoided, PG&E shall contact CDFW to determine appropriate minimization and mitigation measures. Such measures may include, but may not be limited to, the approaches listed below. PG&E shall not proceed with ground disturbing activities that may directly or indirectly impact areas within 50 feet of special-status plants without first conferring with CDFW. The appropriate means to mitigate unavoidable impacts shall be determined based on coordination with CDFW while taking into account the nature and extent of unavoidable impacts and the species' rarity and known distribution within the Project Area. Mitigation may include a combination of the approaches outlined below, or other approaches determined by CDFW to sufficiently mitigate the impact. To the extent possible, mitigation of unavoidable impacts to special-status plants may occur in conjunction with mitigation for temporal loss of jurisdictional wetlands and waters.</p> <p>i. <i>Seed Collection for Restoration:</i> Seed from individuals to be impacted would be collected prior to ground-disturbing activities. The seed</p>		

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	<p>would be collected following the protocols set forth by the Center for Plant Conservation and, if long-term storage is necessary, placed in a secure seed bank facility such as the Agricultural Research Service National Center for Genetic Resources Preservation in Fort Collins, Colorado. Collected seed would be applied to restoration areas within the Project Area. Restoration plans developed for the proposed Project would be revised to include success criteria for restoration of the special-status plant species to ensure successful re-establishment of the impacted species. Success criteria for impacted special-status plants would be developed through coordination with CDFW.</p> <p>ii. <i>Enhancement of Known Populations:</i> Known populations of the species to be impacted would be enhanced by undertaking actions to increase the size of the known population. Such actions may include improving the quality of occupied habitat (e.g., invasive species removal) and/or seeding to facilitate population expansion. Enhancement of known populations may occur at off-site populations that are currently conserved or within the occupied portions of the Project Area that can be conserved. An enhancement plan for impacted special-status plants would be developed through coordination with CDFW. The plan shall be approved by CDFW and submitted to DTSC, BLM, BOR, USFWS, DOI, and Interested Tribes for review and comment prior to finalization.</p> <p>iii. <i>Preservation of Occupied Habitat:</i> Habitat occupied by the species to be impacted would be permanently protected by establishing a conservation easement. PG&E would coordinate with CDFW to determine the conditions of the conservation easement, including the required acreage of occupied habitat to be conserved and requirement monitoring and management of the conserved population. The agreed upon conditions would be detailed in a mitigation plan for impacted special-status plants. The plan shall be approved by CDFW and submitted to DTSC, BLM, BOR, USFWS, DOI, Interested Tribes, and other appropriate landowners for review and comment prior to finalization.</p>		
<p>Impact BIO-3: Fish Mortality, Interference with Spawning Habitat, and Other Adverse Aquatic Effects. Increased sedimentation and turbidity, the release of contaminants, and standing during construction activities could also adversely affect fish habitat and movement in the Colorado River</p>	Implementation of Mitigation Measure HYDRO-1 (see below).	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this significant environmental effect as identified in the Final SEIR.</p> <p>Facts in Support of Finding: Implementation of Mitigation Measure HYDRO-1 would minimize impacts on water quality by controlling potential pollutants, including sediment, and runoff discharges from the Project Site. Consequently, any impacts associated with pollutants resulting from alterations of drainage and water quality would be reduced to a less than significant level. Implementation of Mitigation Measure HYDRO-1 would reduce potentially significant impacts to a less</p>

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			than significant level (Final SEIR, Volume 2, pp. 4.6-53 - 4.6-64.)
Impact BIO-4: Substantial Interference with Fish or Wildlife Movement Corridors or Nursery Sites. The Project could impede the use of bat maternity roosts, which are considered a type of native wildlife nursery site. Modifying, destroying or impeding the use of active maternity roosts of special-status bat species could result in substantial interference to the species reproduction and distribution.	Implementation of Mitigation Measure BIO-2f.	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this significant environmental effect as identified in the Final SEIR.</p> <p>DTSC also finds that such changes or alterations are within the responsibility and jurisdiction of other public agencies (such as CDFW) and not the agency (DTSC) making the finding. Such changes have been adopted by such other agencies or can and should be adopted by such other agencies. (CEQA Guidelines, § 15091, subd. (a)(2).)</p> <p>Facts in Support of Finding: Implementation of Mitigation Measure BIO-2f would reduce impacts to bat maternity roost sites to a less than significant level through seasonal avoidance or establishing avoidance buffers around identified maternity roost sites for activities performed during the maternity roosting season (Final SEIR, Volume 2, pp. 4.3-113 – 4.3-115; 4.3-121 - 4.3-123.)</p>
Cultural Resources			
Impact CUL-1: Cause Substantial Adverse Change in the Significance of a Historical Resource as Defined in CEQA Guidelines Section 15064.5. Construction, operation and maintenance, and decommissioning activities of the proposed Project could result in substantial adverse changes to historical resources in the Project Area, including the (1) the Topock TCP; (2) other historical resources listed in Table 4.4-2, and (3); historical resources that could be identified during construction. Impacts could occur through ground disturbance and other Project-related activities or through the introduction of out-of-character visual or auditory intrusions to historical resources that gain their significance in part because historical associations or aesthetic values. This impact would be potentially significant , as previously identified in the Groundwater FEIR.	<p>CUL-1a-1: Avoidance and Preservation in Place (Groundwater FEIR Measure with Revisions). During the construction, operation and maintenance, and decommissioning phases of the Project, PG&E shall carry out all Project activities, and shall require all subcontractors implement established protocols regarding Project activities, in ways that avoid, minimize, and mitigate significant impacts resources associated with the Topock TCP, consistent with the CEQA Guidelines and with Stipulation I.B of the PA and Section 7.1 of the CHPMP, and to the maximum extent feasible as determined by DTSC, in coordination with PG&E, Interested Tribes, and respective landowners.</p> <p>CUL-1a-2: Develop Tribal Access Plan (Measure Completed – Tribal Access Plan attached as Appendix P of the C/RAWP).</p> <p>CUL-1a-2a: Implement Tribal Access Plans (New Measure). During the construction, operation and maintenance, and decommissioning phases of the Project, on non-federal land, Tribal access shall be permitted in a manner consistent with Section 2.1 “<i>Protocols for Continued Tribal Coordination</i>” of the CIMP (as described below in Mitigation Measure CUL-1a-8q) and “<i>Protocol to Preserve Tribal Member’s Access to, and Use of, the Project Area</i>” as included in Appendix P of the C/RAWP, and on federal land, Tribal access will be governed by the provisions of Appendix B “<i>Tribal Access Plan</i>” of the CHPMP.</p> <p>Procedures required by Appendix P of the C/RAWP include protocols and timelines for requesting access to PG&E property for religious, spiritual, or</p>	Significant and Unavoidable	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that substantially lessen, but not to a less than significant level, this significant environmental impact. Even with implementation of mitigation measure CUL-1a-1 through 19 and CUL-1b/c-1 through CUL-1b/c-7, the proposed Project could result in substantial adverse changes to historical resources in the Project Site, including (1) the Topock TCP; (2) other historical resources listed in the Final SEIR (Table 4.4-2), and (3); historical resources that could be identified during construction. Therefore, the Project’s impacts to the Topock TCP and historical resources are considered significant and unavoidable despite the adoption of all feasible mitigation measures. DTSC further finds that complete avoidance of direct and indirect effects of the Project to the Topock TCP and the physical characteristics that convey its historical significance is not feasible. This is because complete avoidance would prevent DTSC from realizing the fundamental Project objective to implement an active remediation system to clean up the contaminated groundwater plume.</p> <p>Because of DOI/BLM’s extensive regulatory oversight of cultural resources in the Topock area, DTSC also finds that such changes or alterations are within the responsibility and jurisdiction of other public agencies (such as DOI/BLM) and not the agency (DTSC) making the finding. Such changes have been</p>

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	<p>other cultural purposes and notification procedures (for additional details on requirements of the CIMP see below Mitigation Measure CUL-1a-8q, Section 2.11).</p> <p>Procedures required by Appendix B of the CHPMP include allowing Interested Tribes to access federal lands without specific authorization for the purposes of collecting materials (such as plants and minerals) or for traditional or ceremonial noncommercial uses; protocols for obtaining access permission for other purposes (such as larger or overnight gatherings); privacy measures that prohibit recording Tribal activities; and closure of some areas and roads to public access.</p> <p>CUL-1a-3: Site Security (Groundwater FEIR Measures with Revisions). During construction, operation and maintenance, and decommissioning of the Project, PG&E shall enhance existing measures to prevent and reduce incursions from recreational and/or other outside users from affecting unique archeological and historically significant resources, including resources within the Topock TCP, by implementing Measures CUL-1a-3a, -3c, -3d, and -3e:</p> <p>CUL-1a-3a: Professional Qualifications and Site Condition Assessment (Groundwater FEIR Measure with Revisions). PG&E's approved Qualified Cultural Resource Consultant shall carry out all cultural resources work associated with the Project and implement the Mitigation Monitoring and Reporting Program (MMRP). Cultural resources consulting staff shall meet, or be under the direct supervision of individuals meeting, the minimum professional qualifications standards set forth by the Secretary of the Interior (codified in 36 CFR Part 61; 48 FR 44739), as provided in Stipulation XI.A of the PA. In the event that PG&E needs to retain a new Qualified Cultural Resource Consultant, or additional cultural consultants, DTSC shall have approval authority over PG&E's selection of cultural resources consultants.</p> <p>During construction, operation and maintenance, and decommissioning of the Project, the Qualified Cultural Resources Consultant shall conduct yearly site condition assessments of documented historical resources (as identified in Table 4.4-2 of this SEIR, as well as any future resources identified within the Project Area, and any additional resources that the BLM requests be included in the annual site condition assessments), including site condition assessments of the Topock TCP, to determine if substantial adverse changes have occurred relative to the condition of the historical resources during the past year. Site condition assessments may occur less frequently or may be limited in geographic scope upon approval by DTSC and in coordination with PG&E, Interested Tribes, and BLM. PG&E shall offer to retain a Tribal monitor at historic rates of compensation or Tribal representatives designated by the Tribal Council or chairperson, if so requested, to accompany the Qualified Cultural Resources Consultant during the site condition assessments. Annual site condition assessment reports in the established format shall be prepared documenting the results of the site condition assessments. PG&E shall provide reports to DTSC and the</p>		<p>adopted by such other agencies or can and should be adopted by such other agencies. (CEQA Guidelines, § 15091, subd. (a)(2).)</p> <p>Facts in Support of Finding: DTSC has determined that implementation of the Project would result in an adverse impact on the National Register of Historic Places-eligible Topock TCP. According to input from Interested Tribes, those physical characteristics that convey the TCP's historical significance (contributing elements) include the Topock Maze, land, water, plants, animals, prehistoric archaeological resources, and the viewshed (see Final SEIR Volume 2, Section 4.4.138-139).</p> <p>Construction and implementation of the Project, in addition to the other ongoing activities within the Topock TCP, could cause a substantial adverse impact to the contributing elements of the TCP historical resource, as defined in CEQA Guidelines Section 15064.5. The substantial adverse impact to the contributing elements to the Topock TCP would result from ground-disturbing activity that would directly and adversely affect the soil, landforms, and unknown prehistoric archaeological resources; and the presence of equipment, workers, and vehicles, which would introduce activities that are inconsistent with the natural setting associated with the Topock TCP. These activities would also materially affect the cultural values ascribed to the TCP by some Native American Tribes. This impact would be significant and unavoidable.</p> <p>In order to reduce these impacts, Mitigation Measures CUL-1a-1 through 19 and CUL-1c through 7 shall be implemented. Implementation of Mitigation Measures CUL-1a through 19 and CUL-1c through 7 will reduce but not completely avoid the potential for significant impacts to the historical resources identified in as the Topock TCP. The Project would result in the destruction or alteration of contributing elements which convey the historical significance of the Topock TCP. As a result, the impacts to the historical resource identified as the Topock TCP would remain significant and unavoidable. (see Final SEIR Volume 2, pp.4.4-111 – 4.4-119; 4.4-136-4.4-139).</p>

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	<p>Interested Tribes for review and comment in accordance with CIMP Section 2.3 “<i>Protocols for the Review of Cultural Resource-Related Documents</i>” and Section 6.6.5 “Periodic Site Monitoring” of the CHPMP. Based on the results of the report, DTSC may request that PG&E initiate a meeting with agencies and Interested Tribes to discuss the findings within 30 days of submittal of the reports.</p> <p>CUL-1a-3b: Develop Site Security Plan (Measure Completed – Site Security Plan attached as Appendix Q of the C/RAWP).</p> <p>CUL-1a-3c: Coordination with BLM and San Bernardino County (Groundwater FEIR Measure with Revisions). PG&E shall continue to coordinate with BLM and San Bernardino County to facilitate outreach to the staff at Moabi Regional Park, requesting that they communicate to visitors the parts of the Project Area that are off limits to off-road vehicle usage because of health and safety concerns, public lands management plans, or landowner requests. PG&E shall make a good faith effort to involve Interested Tribes in this outreach effort, providing Interested Tribes with the opportunity to comment on outreach materials or provide a Tribal representative the opportunity to participate in the outreach activities. As part of this outreach effort, PG&E shall work with Moabi Regional Park and offer to design, develop, and fund the installation of an informational display (e.g., bulletin board, kiosk) within Moabi Regional Park that informs visitors of the work being done in connection with the Project.</p> <p>As provided in Appendix P of the C/RAWP, PG&E shall use information gathered during previous meetings with BLM, San Bernardino Regional Parks Department, Moabi Regional Park concessionaires, and Interested Tribes to facilitate the execution of visitor outreach materials. PG&E shall develop draft visitor outreach materials; develop a draft training session for Moabi Regional Park visitor-contact employees; develop display design concepts and draft informational content; and develop a draft plan for executing other outreach ideas identified during meetings. Once initial materials and plans are drafted, PG&E shall consult with the BLM, San Bernardino Regional Parks Department, Moabi Regional Park concessionaires, and Interested Tribes and provide these stakeholders an opportunity to review and comment on any outreach plan prior to its implementation. PG&E shall initiate conversations with key stakeholders (i.e., BLM, San Bernardino County, Moabi Regional Park, and Interested Tribes) within six months of approval of the Final Remedy Design.</p> <p>In addition to Appendix P of the C/RAWP, PG&E shall complete and implement outreach materials and plans prior to the start of construction. Materials shall be reviewed by PG&E at each phase of the Project and may be updated with input from Interested Tribes and with approval by DTSC, as the Project progresses.</p> <p>CUL-1a-3d: Signage (Groundwater FEIR Measure with Revisions). PG&E shall post signage to indicate those parts of the Project Area that are off limits to off-road vehicle usage due to possible health and safety</p>		

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	<p>concerns and to reduce potential damage to environmental resources. If agreed to by land owners and/or local, state, or federal management entities within the Project Area, PG&E shall work with the relevant land owner or land management entity to develop, design, and fund the installation of easily visible and clear signage. This may include coordination with BLM to install signage noting the designation of the area as an Area of Critical Environmental Concern owing to its biological and cultural resources, while ensuring that signs are placed in a way that does not draw unwanted attention to specific resources.</p> <p>As provided in Appendix P of the C/RAWP, PG&E shall initiate conversations with key stakeholders (i.e., BLM, San Bernardino County, Park Moabi) within six months of the final approval of the Final Remedy Design. In addition to the key stakeholders listed in Appendix P of the C/RAWP, the FMIT shall be included as a land owner in the Project Area.</p> <p>In addition to requirements set forth in Appendix P of the C/RAWP, PG&E shall include Interested Tribes as key stakeholders in the design and installation of signage, and shall install signage prior to the start of construction, if possible, dependent on cooperation and input from land owners and land management entities.</p> <p>CUL-1a-3e: Site Security (New Measure). Site security procedures shall be implemented in a manner consistent with the Site Security Plan (C/RAWP Appendix Q). The Site Security Plan includes, but is not limited to, protocols for regular inspections of the Project Area during working and non-working hours; ensuring construction zones and protective measures are being maintained; ensuring personnel use designated travel routes and parking areas; notification and reporting of outside disturbances to the environment; worker cultural resources sensitivity training; and visitor access controls.</p> <p>CUL-1a-4: Technical Review Committee (Groundwater FEIR Measure with Revisions). PG&E shall work with representative members of the Interested Tribes to convene and retain a multidisciplinary panel of independent scientific and engineering experts as part of a Technical Review Committee (TRC). TRC may be called upon by the Interested Tribes to review Project-related documents and attend Project-related meetings. TRC efforts must be specific to that person's area of expertise and with the objective of advising interested tribal members on technical matters relating to the remedy design and its construction. The TRC shall be made up of not more than five multidisciplinary experts. The TRC shall include only persons with technical expertise limited to geology, hydrology, water quality, engineering, paleontology, toxicology, chemistry, or biology. TRC members shall be retained at rates comparable to those paid historically to tribal experts by PG&E. TRC members shall be selected by majority vote amongst participants from the Interested Tribes. For the purposes of contracting, this grant may be awarded to one tribal government to manage or, alternatively, PG&E may reimburse the tribe or TRC members directly. The entirety of the monies shall be used to fund the scientific and</p>		

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	<p>engineering team exclusively, and shall not be used to fund other tribal government expenses or used to support legal counsel. Activities shall be reported to DTSC for review and to ensure PG&E is in compliance at least annually. Funding for the TRC shall continue until DTSC has determined that the remedy is operating properly and successfully, at which time the necessity of the TRC shall be assessed by DTSC and the provision of the TRC may be extended, reduced, or terminated. During the operation and maintenance and decommissioning phases, the necessity of the TRC shall be periodically evaluated by DTSC. This is the same committee referenced by CR-1e-8 in the Topock Soil Investigation Project EIR and MMRP.</p> <p>CUL-1a-5: Avoidance of Indigenous Plants of Biological and Cultural Significance (Groundwater FEIR Measure with Revisions). During construction, operation and maintenance, and decommissioning of the Project, should any indigenous plants of traditional cultural significance and listed in Appendix PLA of the Groundwater FEIR be identified within the Project Area, PG&E shall avoid, protect, and encourage the natural regeneration of the identified plants. In the event that impacts to the identified plants cannot be avoided and such plants are displaced, provisions included in the Plan for Culturally Significant Plants (Appendix A of the CIMP) shall be implemented. This mitigation measure is not meant to replace or subsume any actions required by state or federal entities with regard to the protection of species listed as rare, threatened, or endangered. Appendix A of the CIMP requires preconstruction surveys of works areas, staging areas, and access routes to identify and demarcate culturally significant plants; protocols for transplanting culturally significant trees and plants; protocols for salvaging topsoil for re-use during site rehabilitation to encourage regrowth of desert annuals; collecting seeds for future planting; protocols for replacement planting by container grown plants/trees; and future monitoring of transplanted trees and shrubs.</p> <p>CUL-1a-6: Noise (Groundwater FEIR Measure with Revisions). During construction, operation and maintenance, and decommissioning of the Project, all phone calls and alarms associated with remediation activities or facilities shall not be routed through PG&E's existing alarm system utilized at the Station. The notification system for remediation-related alerts and/or phone calls shall not introduce additional noise to the Project Area, to the maximum extent feasible, provided there is ongoing compliance with applicable safety regulations or standards of the Federal Energy Regulatory Commission, Occupational Safety and Health Administration, and other agencies.</p> <p>CUL-1a-7: Nighttime Lighting (Groundwater FEIR Measure with Revisions). During construction, operation and maintenance, and decommissioning of the Project, nighttime construction-related activities shall be limited to circumstances that require the continuation of work into the nighttime periods because it cannot be disrupted or suspended (including but not limited to conditions during drilling or concrete pouring) or work may require an early morning start to ensure completion within 1 day or</p>		

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	<p>because of heat constraints including with regard to personnel health and safety. To minimize lighting impacts, lighting shall include shrouding or shielding for portable lights, the use of the lowest allowable height and fewest feasible numbers of lights consisting of downward-facing fixtures fitted with cutoff shields to reduce light diffusion. No permanent light poles shall be installed. However, lighting would also be required to comply with the minimum county, state, and federal security and safety standards (as described in Appendix P – Cultural Resources Protocols).</p> <p>CUL-1a-8 (a through p): Develop Cultural Impact Mitigation Program (CIMP) (Measure Completed – Cultural Impact Mitigation Program attached as Appendix H of the C/RAWP).</p> <p>CUL-1a-8q: Implement Cultural Impact Mitigation Program (New Mitigation Measure).</p> <p>All activities related to the Final Remedy Design, as well as implementing the Future Activity Allowance, long-term operation and maintenance, and future decommissioning activities, shall be implemented consistent with provisions of the Cultural Impact Mitigation Program (CIMP). In addition to the parties listed in Section 2.15 of the CIMP as requiring consultation regarding discoveries and review of draft documents, DTSC shall also be included in these processes. PG&E, in consultation with the Interested Tribes, may amend the CIMP if protocols or procedures require modification due to unforeseen circumstances, as deemed necessary by DTSC. The CIMP, which is based upon Groundwater FEIR measures CUL-1a-8 (a through p), is summarized below. The text below is intended to provide a brief summary of the primary impact-reducing components of the CIMP, some of which reference the federal requirements of the PA and CHPMP (the CIMP, PA, and CHPMP may be amended or revised from time to time). Where this summary text differs from the CIMP (or the PA or CHPMP) or subsequent revision, the language of the CIMP (or PA or CHPMP) shall govern.</p> <p>Section 2.1- Protocols for Continued Tribal Communication: This provides methods for facilitating open communication with Interested Tribes; documenting the Interested Tribes' preferences for method of open communication; and reporting Tribal outreach to DTSC. This protocol incorporates reference to Section 6.7 “<i>Protocols for Tribal Notification and Consultation in Advance of Certain Activities</i>” of the CHPMP, which requires the BLM to establish email and mail distribution lists for all Points of Contact (POCs) and distribution of documents in accordance with Appendix B of the PA.</p> <p>Section 2.2 - Protocols for Appropriate Treatment of Archaeological Materials: This describes how PG&E will continue to collaborate with Interested Tribes, respecting their preferences for avoidance and other treatment of archaeological discoveries; pre-construction field verifications; implementing procedures in Section IX of the PA and Section 8.1 and Appendix C of the CHPMP (i.e., cease work measures, notification protocols, inspecting and evaluating significance of discoveries, avoiding</p>		

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	<p>discoveries if possible and establishing protective measures, and treatment of discoveries that cannot be avoided). This section also outlines collection and curation protocols and data recovery procedures.</p> <p>Section 2.3 - Protocols for the Review of Cultural Resource-Related Documents: This describes the dissemination and review of cultural resource-related documents; outlines types of documents available for review and comment; provides a timeframe for review and comment; and provides an opportunity for Interested Tribes to present their unique perspectives on cultural significance of the area, including natural and cultural resources, Tribal beliefs, religions, customs, and current practices. This protocol incorporates reference to Section XI of the PA.</p> <p>Section 2.4 - Protocols for the Review of Project Design Documents: This documents the procedures for dissemination and Tribal review and comment on the completed groundwater remedy design documents prior to the beginning of construction. The Final Remedy Design document was completed and submitted to DTSC on November 18, 2015.</p> <p>Section 2.5 - Protocols for Restoring the Environment to Its Preconstruction Conditions Upon Decommissioning: This protocol includes a description of the general approach to restoring areas affected by the Final Remedy Design (e.g., backfill and compaction; grading and contouring; habitat restoration and revegetation; and consideration/accommodating requests for Tribal ceremonies); completion of a restoration plan within 120 days of the Department of the Interior's (DOI's) certification of the completion of the remedy; development of the restoration plan in consultation with land owners and managers; and consultation with Signatories, Interested Tribes, and Invited Signatories to the PA. (Mitigation Measure CUL-1a-17, described below, requires implementation of the restoration plan.)</p> <p>Section 2.6 - IM-3 Decommissioning Plan (Appendix B of the CIMP): The IM-3 Decommissioning Plan includes procedures for IM-3 system lay-up; procedures for decommissioning and removing the IM-3 system; waste management procedures; best management practices and mitigation measures compliance; soil confirmation sampling; a general approach for restoring areas originally affected by IM-3 operations; approvals and reporting requirements during the phases of IM-3 system closure; and a proposed work schedule.</p> <p>Section 2.7 - Protocols for Repatriation of Clean Soils During Construction: The approach and management to soil displacement was documented in "Revised Management Protocol for Handling and Disposition of Displaced Site Material" (Appendix B of the Soil Management Plan) and outlines the procedures and measures to minimize the amount of displaced material that leaves the Project Area and to provide for the eventual return, reuse, or restoration of the material onto the lands from which it was displaced. The management protocol was incorporated into the Soil Management Plan (Appendix L of the C/RAWP) – see Mitigation Measure</p>		

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	<p>CUL-1a-18 below for additional details on the procedures in the Soil Management Plan.</p> <p>Section 2.8 - Noise Protocol: This protocol includes establishing a disturbance coordinator for Project-related noise concerns; implementing engineering controls to minimize construction-related noise (e.g., install temporary noise barriers such as berms, stockpiles, dumpsters, bins, and/or engineered acoustical barriers) within identified noise buffers; selecting noise monitoring locations in coordination with Interested Tribes; maintaining all construction equipment according to manufacturer guidelines and fitting equipment with the best available noise suppression devices; shrouding or shielding impact tools; muffling or shielding exhaust ports on power equipment; limiting idling of construction equipment; procedures for addressing Project-related noise concerns; and communication/notification with Interested Tribes.</p> <p>Section 2.9 - Protocols for the Appropriate Methods, Consistent with Mitigation Measures AES-1 and AES-2, to Reduce Visual Intrusions: This protocol includes the measures listed in SEIR Mitigation Measures AES-1 and AES-2, including a minimum setback of 20 feet from the water to prevent substantial vegetation removal along the riverbank; protecting mature plants; revegetation of disturbed areas within the riparian vegetation along the Colorado River; using plant material consistent with surrounding native vegetation; construction wells, pipeline, and utilities in muted, earth-tone colors consistent with the surrounding natural color palette. The protocol also summarizes the design concepts that PG&E incorporated into the Project, including locating final aboveground facilities within existing facilities when appropriate; building designs that are harmonious with existing buildings and nearby landforms; flush-mount or below-ground installations whenever feasible; construction within existing transportation corridors; working within previously disturbed sites whenever possible; placing aboveground facilities away from traffic where feasible; and designing lighting to minimize glare. The protocol also describes the opportunities afforded to agencies, Interested Tribes, and other stakeholders to provide their input on visual aspects of the Project design, such as providing visuals in design packages and allowing reviewing parties to request additional visualizations or key views. The protocol also provides notification procedures to address temporary visual intrusions during Project implementation.</p> <p>Section 2.10 - Protocols for Tribal Notification in Advance of Project-Related Activities: Whenever possible, PG&E will notify Interested Tribes at least two weeks in advance of project-related ground-disturbing activities (such as grading, trenching, boring, drilling, or other excavation) whenever possible. Methods of notification may include, but are not limited to: through workplans and Project schedules; formal presentation or announcements at meetings; posting schedules online; email; telephone when advance notification was not possible; monthly schedules of field activities; weekly look-ahead schedules; and/or daily information sheets during times of intensive Project activity.</p>		

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	<p>Section 2.11 - Protocols to Accommodate Tribal Ceremonies or Activities Involving Topock Cultural Area: Key Tribal ceremonies involving the Topock Cultural Area [Topock TCP] will be accommodated if feasible as determined by DTSC. Any Tribe(s) wishing to perform such a ceremony may contact PG&E's Site Manager by telephone, email, or in writing to discuss the specific request. For the purposes of this protocol, key Tribal ceremonies will include any ceremonies or activities for which the Tribes choose to notify and/or ask for assistance. PG&E will consider the request and decide if the request can be accommodated as is, with modifications, or not at all, and will notify the requestor by phone or in person as soon as possible. PG&E staff, consultants, contractors or subcontractors will conduct themselves appropriately and, if invited to participate, will be respectful, turn off cell phones, and refrain from photography without permission. PG&E will maintain confidentiality of documents and sensitive information to the maximum extent allowed by the law. The Tribal representative will be responsible for further discussion of ceremonial activities with other identified impacted landowners, if necessary. Access to the Project Area by Tribal religious practitioners for the purpose of conducting Tribal ceremonies will be consistent with Federal and state laws, regulations, and agreements governing the property within the Project Area. Such access will also be consistent with the Tribal Access Plan prepared in response to 2011 Groundwater FEIR Mitigation Measure CUL-1a-2, "Protocol to Preserve Tribal Member's Access to, and Use of, the Project Area" as included in Appendix P of the C/RAWP, General Principle I.C of the BLM's PA, and Appendix B "Tribal Access Plan" of the CHPMP.</p> <p>Section 2.12 - Protocols for Tribal Monitors to Observe Ground-Disturbing Activities: PG&E will notify Interested Tribes of planned ground-disturbing activities and other scientific surveying within a minimum of one week and in the event of schedule changes. Tribal monitors will prepare and submit Daily Monitoring Logs. This protocol references Section 6.6.4 "Construction Monitoring" of the CHPMP, which requires advance notification and inviting Tribal monitors to observe ground-disturbing activities in accordance with Appendix C of the PA.</p> <p>Section 2.13 - Provision of Reasonable Compensation for Tribal Monitors: PG&E will provide reasonable compensation for Tribal monitors who work on the Project consistent with historic rates.</p> <p>Section 2.14 - Protocols for Protective Measures for Archaeological/Historical Sites During Construction: This protocol provides for identifying protective measures cultural sites, to the extent feasible, prior to construction; modifying construction zones to avoid discoveries identified during construction; implementing protective measures (such as covering, flagging, or fencing); if needed, modifying exclusion zones in consultation with the parties in the field; providing for archaeological and Tribal monitoring of implementation and removal of protective measures; periodic inspection of protective measures during construction; inspection, documentation, evaluation, and protection of</p>		

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	<p>discoveries; notification to Tribal monitors of discoveries; and restoration of areas to pre-construction conditions after removal protective measures.</p> <p>Section 2.15 - Protocols for Reporting Discoveries of Cultural Importance: This protocol outlines how PG&E will notify DTSC and BLM of discoveries of previously unidentified or suspected historic or archaeological resources (including human remains and/or associated funerary objects or graves), as well as Interested Tribes if the resource is Native American in origin; will cease work within the vicinity of the discovery until the discovery has been evaluated and treatment developed; implement protective measures, if necessary; choose avoidance as the preferred method for the treatment of cultural resources, particularly for human remains, items of cultural patrimony, or funerary objects; and document discoveries in a culturally sensitive manner, and invite Interested Tribes to assist with documentation to identify Tribal cultural values. If further studies are required for any discovery, PG&E will consult with BLM, who will consult with Interested Tribes. Documentation will be provided to BLM and Interested Tribes (for Native American resources) for review and comment and final documents will be distributed to DTSC, BLM, Interested Tribes, and PG&E, and to ASM or CHRIS as appropriate.</p> <p>Section 2.16 - Protocols for Inspecting Remediation Facilities and/or Staging Areas During Construction: The locations of remediation facilities and staging area will be examined for cultural resources throughout the construction phase. Interested Tribes will receive notice at least 2 weeks in advance whenever possible. Previously impacted land will be selected wherever feasible for re-use as staging areas and/or the siting of remediation facilities and direct physical impacts to the Topock Maze as it is manifested archaeologically will be completely avoided when siting any staging area or remediation facility. Any resources present will be avoided to the extent feasible. This protocol also provides for archaeological and Tribal monitoring of earth-disturbing activities at remediation facilities and/or staging areas during construction, and states that these monitors will at all times comply with Project-wide and job site-specific safety requirements.</p> <p>CUL-1a-9: Preference for Previously Disturbed Areas (Groundwater FEIR Measure with Revisions). During the design of areas to be used as part of the Future Activity Allowance, PG&E shall, in communication with the Interested Tribes (and subject to their review), and to the maximum extent feasible, as determined by DTSC, give: (1) priority to previously disturbed areas for the placement of new physical improvements; and (2) priority to re-use of existing physical improvements, such as but not limited to wells and pipelines, but not including the IM-3 Facility. "Disturbed" areas in this context means those areas outside of documented archaeological site boundaries that have experienced ground disturbance in the last 50 years.</p> <p>CUL-1a-10: Avoidance of Topock Maze (Groundwater FEIR Measure with Revisions). During construction, and operation and maintenance, and decommissioning activities, as well as activities associated with the Future Activity Allowance, PG&E shall consider the location of Loci A, B, and C of</p>		

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	<p>the Topock Maze during the design of Project components and is prohibited from creating any direct physical impact on the Topock Maze, as it is manifested archaeologically. The design of facilities as part of the Future Activity Allowance shall also prevent all indirect (e.g. noise, aesthetics) impacts on the Topock Maze, to the maximum extent feasible as determined by DTSC.</p> <p>CUL-1a-11: Open Grant Funding (Groundwater FEIR Measure with Revisions). During the construction phase of the Project, PG&E shall provide an open grant for one part-time cultural resource specialist/project manager position for each of these four Interested Tribes: Chemehuevi, Cocopah, CRIT, and Hualapai. Additionally, the FMIT shall receive one full-time cultural resource specialist/project manager position in light of their ownership of land in the Project Area and historical involvement in the remediation process. The award of the grants is for the timely review of Project documents, participating in project-related meetings, coordinating and managing input and interests for the Tribe on the Project, and to act as a Tribal liaison with PG&E and regulatory agencies. The cultural resources specialist/project manager shall be compensated at rates of historic compensation with provisions for escalation of rates tied to the U.S. Department of Labor, Bureau of Labor Statistics Employment Cost Index. The payment of grant monies shall be timed to the awarded tribes' fiscal cycles so that the tribes are not forced to front funds for long periods of time. These positions shall act as cultural resources contacts and project managers for interactions between the tribes, PG&E, and DTSC to ensure coordination during construction of the remedy to avoid, reduce, or otherwise mitigate impacts on resources qualifying as historical resources under CEQA. This funding is separate from provisions for tribal monitor positions and shall not be used for routine tribal business or legal counsel. For review and approval, PG&E shall provide DTSC with the names of the selected grant recipients and a report that summarizes activities associated with the grant program, at least annually. Funding for these positions shall continue until DTSC has determined that the remedy is operating properly and successfully, at which time the necessity of the cultural resource specialist/project manager positions shall be assessed by DTSC and the positions shall be extended, reduced, or terminated. During the operation and maintenance and decommissioning phases, the necessity of the positions shall be periodically evaluated by DTSC. These positions shall be inclusive of those referenced by CR-1e-9 in the Topock Soil Investigation Project EIR and MMRP and not additive.</p> <p>CUL-1a-12: Tribal Ceremonies (Groundwater FEIR Measure with Revisions). PG&E shall provide reasonable opportunity, as determined by DTSC, for Interested Tribes to conduct a traditional healing/cleansing ceremony (or ceremonies) before and after the construction phase. Accommodations for Tribal ceremonies shall be implemented consistent with Section 2.11 "<i>Protocols to Accommodate Tribal Ceremonies or Activities Involving Topock TCP</i>" of the CIMP (as described above in Mitigation</p>		

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	<p>Measure CUL-1a-8q) and Section 7.2 “<i>Accommodation of Tribal Activities and Ceremonies Involving the Topock Maze/TCP</i>” (see below) and Appendix B of the CHPMP (as described above in Mitigation Measure CUL-1a-2a).</p> <p>As described in Section 7.2 of the CHPMP, the BLM will continue to work with the Interested Tribes to identify Tribal activities and ceremonies that are associated with the Topock TCP and to consult with the Interested Tribes and PG&E to develop treatment measures to accommodate them.</p> <p>CUL-1a-13: Develop Worker Education Training Program (Measure Completed – Worker Education Training Program is attached in Appendix P of the C/RAWP).</p> <p>CUL-1a-13a: Implement Worker Education Training (New Measure). During construction, operation and maintenance, and decommissioning of the Project, worker education training procedures shall be implemented consistent with the protocols identified in Appendix P of the C/RAWP. The following provides a summary of the worker education training procedures as identified in Appendix P of the C/RAWP. The worker education program will be implemented prior to commencement of any ground-disturbing activities and as personnel are added. The program includes, but is not limited to: mandatory training for PG&E employees, consultants, contractors, and subcontractors who are involved with construction or ground disturbing activities (including decommissioning and restoration); cultural sensitivity training to familiarize personnel with the sacred nature of the area; providing for participation of Interested Tribes, Tribal monitors, archaeological monitors, and Federal agency staff as appropriate; and non-tolerance of any disrespectful behavior in the field and removal of any staff, workers, or contractors who do not comply. Personnel engaged in field activities will be trained prior to conducting fieldwork and personnel engaged in design work will be trained as soon as practicable after being assigned to the Project. Training will be conducted at each Field Project Orientation meeting prior to each substantial Project work phase and at additional opportunities as identified by PG&E in collaboration with the Interested Tribes. Training will include, but is not limited to discussion topics such as: the significance and sensitivity of the Topock TCP; appropriate on-site behavior; protection of significant cultural resources; worker responsibilities (avoidance of sensitive areas, staying on designated routes and work areas, etc.); and consequences of noncompliance. Presentation materials that may be developed will be shared with Interested Tribes for their input. PG&E will maintain training records that will be dated and signed by the trainee and trainer.</p> <p>CUL-1a-14: Tribal Notification of Potential Future Activities (New Measure). For any potential Future Activity Allowance that requires preparation of a work request, work plan, or technical memorandum, PG&E shall submit the subject documentation to DTSC, which will contain a description of the proposed activities, any available information regarding current conditions, and tracking information regarding how much of the Future Activity Allowance would be used by the particular activity, should it be authorized by DTSC. DTSC shall then provide the documentation to</p>		

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	<p>Interested Tribes (and other stakeholders) for review and comment. Timeline for review and consideration of Tribal comments shall be made by DTSC on a case-by-case basis, dependent on the known resources present on the subject location and the urgency of the Future Activity Allowance to ensure the proper and successful operation of the Remedy. Following Tribal review of the documentation, next steps could include modifications to the work plan, additional correspondence (i.e., site walk, meetings), or authorization by DTSC of the necessary Future Activity Allowance. If the Future Activity Allowance is ultimately approved by DTSC, all the applicable mitigation measures defined in this SEIR will apply.</p> <p>CUL-1a-15: Future Activity Allowance Cultural Resources Survey (New Measure). During the planning phase of any designed Future Activity Allowance activities, all areas that may be subject to construction or operation and maintenance activities as part of the Future Activity Allowance, plus a 50-foot buffer, and have not been surveyed in the past 5 years, shall be subject to archaeological resources survey prior to any ground disturbing activity. The survey shall be conducted by the Qualified Cultural Resources Consultant and shall document resources potentially qualifying as historical resources under CEQA (both as contributors to the Topock TCP and as individual historical resources). Tribal monitors shall be invited to participate in the survey. PG&E's Qualified Cultural Resources Consultant shall document the results of the survey in a <i>Future Activity Allowance Cultural Resources Survey Report</i> that follows the "Archaeological Resource Management Reports guidelines and Department of Parks and Recreation" guidelines. PG&E's Qualified Cultural Resources Consultant shall also prepare Department of Parks and Recreation 523 forms and file them with the South Central Coastal Information Center (for resources in California) and Arizona State Museum site cards shall be prepared and filed with the Arizona State Museum (for resources in Arizona). PG&E shall distribute draft reports to DTSC, BLM, and the Interested Tribes for review and comment consistent with Section 2.3 "Protocols for the Review of Cultural Resources-Related Documents" of the CIMP and Section 6.7 "Protocols for Tribal Notification and Consultation in Advance of Certain Activities" of the CHPMP (as described above in Mitigation Measure CUL-1a-8q). PG&E shall submit final reports to DTSC, BLM, and the Interested Tribes no less than 2 weeks prior to the start of ground disturbance in an area.</p> <p>In the event that resources potentially qualifying as historical resources under CEQA (either as contributors to the Topock TCP or as individual historical resources) are identified during the survey, avoidance and preservation in place shall be the preferred manner of mitigating impacts to the resources. If avoidance of the identified resources is determined by DTSC, in coordination with respective landowners, Interested Tribes, and PG&E, to be infeasible because, for example, it would impede the fundamental Project objective of implementing the Final Remedy Design, procedures provided in Section 2.2 "Protocols for the Appropriate Treatment of Archaeological Materials" of the CIMP, Section 8 "Discoveries" and Appendix C "Discovery Plan" of the</p>		

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	<p>CHPMP (as described above in Mitigation Measure CUL-1a-8q), and Appendix D “<i>Plan of Action</i>” of the CHPMP (as described below in Mitigation Measure CUL-4) shall be implemented.</p> <p>If DTSC determines that an expedited action is necessary in order to respond to the changing needs of the remedy, pre-construction inspection protocols identified in Section 2.16, “<i>Protocols for Inspecting Remediation Facilities and or Staging Areas During Construction</i>” of the CIMP shall then be followed. This section requires tribal notification in advance of the pre-construction inspection, archaeological and tribal inspection of the area, avoidance of identified resources if possible, or treatment if necessary, and monitoring of any ground disturbance.</p> <p>In instances where Future Activity Allowance activities are proposed in the field due to the need for immediate deviation from a planned activity from unforeseen circumstances, PG&E shall conduct the activity in consultation with an archaeological monitor and Tribal Monitor on the ground, and notify DTSC and the appropriate DOI agency of the activity within 24 hours.</p> <p>CUL-1a-16: Implement Restoration Plan (New Measure). Restoration following decommissioning of the Project shall be implemented in a manner consistent with Section 2.5 “<i>Protocols for Restoring the Environment to its Preconstruction Conditions Upon Decommissioning</i>” of the CIMP (as described above in Mitigation Measure CUL-1a-8q) and the Havasu National Wildlife Refuge Restoration Plan (C/RAWP Appendix G; see Mitigation Measure BIO-1a in this SEIR). Additionally, consistent with requirements of Section 6.3 “<i>Environmental Restoration</i>” of the CHPMP, a Remedy Decommissioning Plan will be submitted by PG&E to DOI within 120 days of DOI’s certification of completion of the CERCLA Remedial Action and determination by DOI that removal of such facilities is protective of human health and the environment. The Remedy Restoration Plan shall be provided to DTSC and Interested Tribes for review and comment, consistent with Mitigation Measure BIO-1b.</p> <p>CUL-1a-17: Displaced Soil Procedures (New Measure). Procedures for the management and handling of displaced soils resulting from activities associated with construction, operation and maintenance, and decommissioning of the Project shall be treated in a manner consistent Section 2.7 “<i>Protocols for Repatriation of Clean Soils Cuttings Generated During Construction</i>” of the CIMP (as described above in Mitigation Measure CUL-1a-8q) and the Soil Management Plan (C/RAWP Appendix L). The following provides a summary of the Soil Management Plan procedures as identified in Appendix L of the C/RAWP. Where this summary text differs from the Soil Management Plan or subsequent revision, the language of the Soil Management Plan shall govern. As indicated in the Soil Management Plan, clean soil (material that is determined to have a representative concentration that is equal to or less than the interim screening level or project-specific cleanup goal) will be labeled and stored on-site in 55-gallon drums/small containers, roll-off bins, and/or stockpiles for return, re-use, and/or restoration. Soil classified as RCRA and non-RCRA hazardous</p>		

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	<p>waste, and non-hazardous soil that is unsuitable for final disposition on-site because contaminants are present above the interim screening level or Project-specific cleanup goal, will be labeled and stored temporarily on-site and transported off-site for disposal. Options for return, re-use, and/or restoration on-site that have been identified include: replacement of original material into original or other borings, trenches, or excavations; creation of topographical or landscape barriers to protect sensitive areas; creation of berms or other structures to prevent erosion; on-site road maintenance; and stockpiling in designated areas.</p> <p>CUL-1a-18: Aesthetics (New Measure). During construction, operation and maintenance, and decommissioning, protocols for the protection of visual resources shall be implemented in a manner consistent with Section 2.9 “<i>Protocols for the Appropriate Methods, Consistent with Measures AES-1 and AES-2 [of the Groundwater FEIR] to Reduce Visual Intrusions</i>” of the CIMP (see also Mitigation Measures AES-1 and AES-2 of this SEIR).</p> <p>CUL-1a-19: Implement Treatment Plan for the Topock TCP (New Measure). All activities associated with construction, operation and maintenance, and decommissioning of the Final Remedy Design shall be implemented consistent with provisions of the <i>Cultural and Historical Property Treatment Plan for the Topock Compressor Station</i> (Hanes and Price <i>in progress</i>), which is being prepared pursuant to requirements of the Stipulation VII.B and Appendix B of the PA and mitigation measure CUL-1b/c-3 of the Groundwater FEIR. The Treatment Plan shall address treatment to the Topock TCP and its contributors, in addition to historical resources other than the Topock TCP (this is the same Treatment Plan referenced in Section 7 “<i>Cultural Property-Specific Treatment Measures</i>” of the CHPMP, which can be used to satisfy the requirements of this mitigation measure). PG&E shall distribute the draft Treatment Plan and any future amendments to the Interested Tribes for tribal review consistent with Section 2.3 “<i>Protocols for the Review of Cultural Resources-Related Documents</i>” of the CIMP and Section 6.7 “<i>Protocols for Tribal Notification and Consultation in Advance of Certain Activities</i>” of the CHPMP (as described above in Mitigation Measure CUL-1a-8q). As such, the Treatment Plan is subject to revision prior to finalization. Once consultation is complete, PG&E shall submit the final Treatment Plan to DTSC for final review and approval prior to the start of construction. DTSC has included specific measures outlined in the draft Treatment Plan (March 26, 2018 version) that reduce impacts to historical resources, beyond those already outlined in the PA, CHPMP, CIMP, and Final SEIR MMRP, as conditions of approval on the Project. When the final Treatment Plan is approved, those final measures will replace and/or supplement those identified in DTSC’s conditions of approval for the Project. The Treatment Plan may be amended in the future in the event of new discoveries or greater than anticipated impacts. Treatment Plan amendments shall be required in instances where the current content of the Treatment Plan is insufficient to address necessary treatment measures and</p>		

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	<p>shall be determined in coordination amongst PG&E, BLM, DTSC, and Interested Tribes.</p> <p>CUL-1b/c-1: Consider Locations of Historical Resources during Design (Groundwater FEIR Measure with revisions). PG&E shall consider the locations of the identified historical resources during the design of the physical improvements necessary for the proposed Project and avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible, as determined by DTSC. Future design plans for the Project, in relation to known cultural resources, shall be submitted to DTSC for review and approval.</p> <p>CUL-1b/c-2: Prepare a Cultural Resources Study (Measure Completed – several cultural resources studies were completed, including “Geoarchaeological Assessment for the Topock Remediation Project” [Appendix T of the C/RAWP] and “Results of Pre-Construction Field Verification Inspections for the Topock Compressor Station Groundwater Remedy” [Moloney and Price 2014, confidential report on file at DTSC]).</p> <p>CUL-1b/c-3: Prepare and Implement a Treatment Plan for Historical Resources other than the Topock TCP (Groundwater FEIR Measure with Revisions). All activities associated with construction, operation and maintenance, and decommissioning of the Final Groundwater Remedy Project shall be implemented consistent with provisions of the <i>Cultural and Historical Property Treatment Plan for the Topock Compressor Station</i> (Hanes and Price <i>in progress</i>), which is being prepared pursuant to requirements of the Stipulation VII.B and Appendix B of the PA and mitigation measure CUL-1b/c-3 of the Groundwater FEIR. The Treatment Plan shall identify measures to lessen impacts to historical resources other than the Topock TCP that cannot be avoided by the Project and that will be subject to significant impacts (this is the same Treatment Plan - <i>Cultural and Historical Property Treatment Plan for the Topock Compressor Station</i> [Hanes and Price <i>in progress</i>] - described above in Mitigation Measure CUL-1a-19 and is currently being prepared). The Treatment Plan shall identify which criteria for listing on the NRHP/CRHR contribute to the affected resource’s significance and which aspects of significance would be materially altered by construction, operation and maintenance, or decommissioning and shall provide for reasonable efforts to be made to permit the resource to be preserved in place or left in an undisturbed state consistent with the CEQA Guidelines and with Stipulation I.B of the PA and Section 7 of the CHPMP, and to the maximum extent feasible as determined by DTSC, in coordination with PG&E, Interested Tribes, and respective landowners. PG&E shall distribute the draft Treatment Plan and any future amendments to the Interested Tribes for tribal review consistent with Section 2.3 “<i>Protocols for the Review of Cultural Resources-Related Documents</i>” of the CIMP and Section 6.7 “<i>Protocols for Tribal Notification and Consultation in Advance of Certain Activities</i>” of the CHPMP (as described above in Mitigation Measure CUL-1a-8q). As such, the Treatment Plan <u>is subject to revision prior to finalization</u>. Once consultation is complete, PG&E</p>		

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	<p>shall submit the final Treatment Plan to DTSC for final review and approval prior to the start of construction. DTSC has included specific measures outlined in the draft Treatment Plan (March 26, 2018 version) that reduce impacts to historical resources, beyond those already outlined in the PA, CHPMP, CIMP, and Final SEIR MMRP, as conditions of approval on the Project). When the final Treatment Plan is approved, those final measures will replace and/or supplement those identified in DTSC's conditions of approval for the Project. The Treatment Plan may be amended in the future in the event of new discoveries or greater than anticipated impacts. Treatment Plan amendments shall be required in instances where the current content of the Treatment Plan is insufficient to address necessary treatment measures and shall be determined in coordination amongst PG&E, BLM, DTSC, and Interested Tribes.</p> <p>CUL-1b/c-4: Cultural Resources Monitoring Program and Inadvertent Discovery Measures (Groundwater FEIR Measure with Revisions).</p> <p>CUL-1b/c-4a: Cultural Resources Monitoring Program. All ground-disturbing activities associated with construction, operation and maintenance, and decommissioning phases of the Project, including the Potential Future Activities, shall require archaeological monitoring and PG&E shall invite Native American monitors to participate. The Cultural Resources Monitoring Program shall be implemented in a manner consistent with Sections 2.10 "Protocols for Tribal Notification in Advance of Project-Related Activities" and 2.12 "Protocols for Tribal Monitors to Observe Ground Disturbing Activities" of the CIMP, Appendix C "Topock Remediation Project Programmatic Agreement Tribal and Archaeological Monitoring Protocol" of the PA, and Section 6.6.4, "Construction Monitoring," of the CHPMP (as described above in Mitigation Measure CUL-1a-8q). In addition to the parties that require notification and coordination as listed in Appendix C of the PA, PG&E shall also notify DTSC.</p> <p>During construction, PG&E shall document monitoring activities in the monthly progress reports or quarterly compliance reports described in Section 2.6.3.3 "Additional Reporting During Remedy Construction" and Table 2.3-1 "Communication Framework During Construction and Startup" of the C/RAWP. During operation and maintenance, PG&E shall document monitoring activities in the quarterly progress reports or annual compliance reports described in Section L2.2 "Summary of Communication Procedures and Protocols" and Table L2.2-1 "Communication Framework During Operation and Maintenance." During decommissioning, PG&E shall document monitoring activities in monthly progress reports or quarterly monitoring compliance reports consistent with those described in Section 2.6.3.3 "Additional Reporting During Remedy Construction" and Table 2.3-1 "Communication Framework During Construction and Startup" of the C/RAWP. Documentation of monitoring shall generally include dates of monitoring, monitoring participants, activities observed, and descriptions of any archaeological resources encountered (resource location information shall be kept separate and confidential). Department of Parks and Recreation</p>		

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	<p>523 forms, following the Office of Historic Preservation’s <i>Instructions for Recording Historical Resources</i>, shall be prepared by the Qualified Cultural Resources Consultant and filed with the South Central Coastal Information Center (for archaeological resources in California) and Arizona State Museum site cards shall be prepared and filed with the Arizona State Museum (for archaeological resources in Arizona) for all newly identified and updated archaeological resources, and shall be compiled and provided to DTSC as they become available. Interested Tribes shall be afforded an opportunity to provide input on archaeological discoveries site forms and updates in accordance with measures outlined in the Treatment Plan (Mitigation Measure CUL-1a-19) and BLM policies and practices pertaining to information sharing.</p> <p>CUL-1b/c-4b: Inadvertent Discoveries. During construction, operation and maintenance, and decommissioning phases of the Project, procedures for the treatment of inadvertent discoveries of resources potentially qualifying as historical resources under CEQA shall be implemented in a manner consistent with Section 2.2 “<i>Protocols for the Appropriate Treatment of Archaeological Materials</i>” of the CIMP, and Section 8 “<i>Discoveries</i>” and Appendix C “<i>Discovery Plan</i>” of the CHPMP (as described above in Mitigation Measure CUL-1a-8q), and Appendix D “<i>Plan of Action</i>” of the CHPMP (as described below in Mitigation Measure CUL-4). In addition to the parties listed in Section 2.15 of the CIMP as requiring consultation regarding discoveries and review of draft documents, DTSC shall also be included in these processes.</p> <p>CUL-1b/c-5: Avoidance and Preservation in Place (New Measure). During the construction, operation and maintenance, and decommissioning phases of the Project, PG&E shall carry out all Project activities, and shall require all subcontractors to implement established protocols regarding Project activities, in ways that avoid, minimize, and mitigate significant impacts to historical resources other than the Topock TCP and unique archaeological resources consistent with the CEQA Guidelines and with Stipulation I.B of the PA and Section 7.3 of the CHPMP, and to the maximum extent feasible as determined by DTSC, in coordination with PG&E, Interested Tribes, and respective landowners.</p> <p>CUL-1b/c-6: Implementation of Additional Protective Measures (New Measure). Mitigation Measures CUL-1a-3 (Site Security); CUL-1a-3a (Professional Qualifications and Annual Historical Resource Condition Inspection); CUL-1a-3c (Coordination with BLM and San Bernardino County); CUL-1a-3d (Signage) CUL-1a-3e (Site Security); CUL-1a-8q (Implement Cultural Impact Mitigation Program); CUL-1a-9 (Preference for Previously Disturbed Areas); CUL-1a-13a (Implement Worker Education Training Program); and CUL-1a-15 (Future Activity Allowance Cultural Resources Survey) shall be implemented to further reduce impacts to historical resources other than the Topock TCP and/or unique archaeological resources prior to and during construction, operation and maintenance, and</p>		

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	<p>decommissioning, as prescribed in each measure which are described in detail above.</p> <p>CUL-1b/c-7: Compliance with SOI Standards (New Measure). Prior to the start of decommissioning activities, PG&E shall retain a qualified architectural historian who meets the Secretary of the Interior's professional qualification standards for architectural history. The qualified architectural historian shall review the decommissioning plan to ensure that removal of the pipeline from the Old Trails Arch Bridge (36-027678), if proposed, would not materially impair the bridge. The architectural historian shall prepare a technical memorandum documenting the results of the review, and provide any recommendations to reduce impacts to less than significant, if necessary, prior to start of decommissioning activities.</p>		
<p>Impact CUL-2: Cause a Substantial Adverse Change in the Significance of a Unique Archaeological Resource. Many of the cultural resources listed in Table 4.4-3 may meet the CEQA criteria for a unique archaeological resource. Construction, operation and maintenance, and decommissioning activities of the proposed Project could result in substantial adverse changes to one or more unique archaeological resource in the Project Area through ground disturbance and other project-related activities.</p>	<p>Implement Mitigation Measures CUL-1b/c-1, CUL-1b/c-3, CUL1b/c-4, CUL-1b/c-5, and CUL-1b/c-6.</p>	<p>Significant and Unavoidable</p>	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that substantially lessen, but not to a less than significant level, this environmental impact. Even with the implementation of the Project as designed and the mitigation measures outlined for Impact CUL-2, the Project could to result in significant impacts to unknown historical resources and unknown unique archaeological resources. Since no other feasible mitigation measures or alternatives are available to reduce this impact to a less than significant level, this impact remains significant and unavoidable despite the adoption of all feasible mitigation measures. DTSC further finds that complete avoidance of direct and indirect effects of the Project to unknown historical resources and unknown unique archaeological resources is not feasible. This is because complete avoidance would prevent DTSC from realizing the fundamental Project objective to implement an active remediation system to clean up the contaminated groundwater plume.</p> <p>Facts in Support of Finding: In addition to the Topock TCP, a total of 124 known historical resources are located within the Project Site, including 119 significant archaeological resources and five historic-period built resources. The Project as designed will avoid significant impacts to known historical resources. However, because the Project involves ground-disturbing activities, there is the potential for such activities to disturb unknown potentially significant resources qualifying as historical resources under CEQA. Ground-disturbing activities associated with the Project have the potential to cause substantial adverse changes to unknown historical resources. Any damage to or destruction of such resources during the discovery process could result in significant impacts. Because prehistoric archaeological resources are considered contributing elements to the Topock TCP, any inadvertent discoveries would</p>

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			<p>be significant given their relationship as contributing elements to the Topock TCP.</p> <p>In order to reduce these impacts, Mitigation Measures CUL-1b/c-1, CUL-1b/c-3, CUL1b/c-4, CUL-1b/c-5, and CUL-1b/c-6 shall be implemented.</p> <p>Construction and implementation of these mitigation measures and the Project as designed will ensure avoidance of significant impacts to known historical resources and will reduce impacts in the event of inadvertent discovery of unknown historic-period archaeological resources, potentially qualifying as historical resources or unique archaeological resources under CEQA, to a less than significant level. However, even with the implementation of Mitigation Measures CUL-1b/c-1, CUL-1b/c-3, CUL1b/c-4, CUL-1b/c-5, and CUL-1b/c-6, impacts to historical resources and unique archaeological resources resulting from the inadvertent discovery of unknown prehistoric archaeological resources would be significant and unavoidable given their relationship as contributing elements to the Topock TCP. Therefore, impacts to known and unknown historical resources would remain significant and unavoidable. (see Final SEIR Volume 2, pp.4.4-136- 4.4-139).</p>
<p>Impact CUL-3: Directly or Indirectly Destroy a Unique Paleontological Resource or Site or Unique Geologic Feature. The proposed Project could result in substantial adverse changes to a unique paleontological resource or unique geologic feature in the Project Area through ground disturbance and other project-related activities.</p>	<p>Mitigation Measure CUL-3: Implement the Paleontological Resources Management Plan (PRMP) and Paleontological Monitoring (Groundwater FEIR Measure with Revisions). PG&E shall comply with all requirements of the <i>Paleontological Resources Management Plan</i> (Arcadis 2015) related to paleontological resources prior to and during construction, operation and maintenance, and decommissioning. The following is a summary of the procedures in the PRMP, which includes: retention of a Principal Paleontologist to oversee paleontological monitoring and to be on-call in the event of discovery; paleontological resources awareness training; future survey of any areas ranked PYFC 3a or above if additional work is planned and they were not previously surveyed; paleontological monitoring of grading and trenching in known sensitives areas and also in the event that sensitive sediments are encountered elsewhere (monitoring of borings, regardless of depth or diameter, is not required); cease work measures and notification protocols in the event of a discovery; recovery of discovered fossils; documentation, preparation, identification, and analysis of recovered fossils; reporting; and curation of paleontological resources of scientific value at an accredited repository. Treatment and disposition of recovered fossils shall be conducted in coordination with the respective landowner.</p>	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this significant environmental effect as identified in the Final SEIR.</p> <p>Facts in Support of Finding: The impact will be less than significant after implementation of and adherence to the <i>Paleontological Resources Management</i> (Arcadis 2015). Ground disturbing activities could potentially encounter paleontological resources, but Mitigation Measure CUL-3 will reduce impacts to any unique paleontological resource or site or unique geologic feature to a less than significant level through monitoring and treatment of any found resource in coordination with a qualified paleontologist. (Final SEIR Volume 2, pp. 4.4-143-144).</p>
<p>Impact CUL-4: Disturb Any Human Remains, Including Those Interred Outside of Formal Cemeteries. Ground-disturbing activities required for all</p>	<p>Mitigation Measure CUL-4: Discovery of Human Remains (Groundwater FEIR Measure with Revisions). In the event of the discovery of human remains, PG&E shall implement the requirements of Section 2.2 “<i>Protocols for Appropriate Treatment of Archaeological</i></p>	Significant and Unavoidable	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that substantially lessen impacts to human remains, but not to a less than significant level on the environment. Even with the</p>

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project phases may disturb as-yet undiscovered human remains, including Native American burial remains (i.e., human remains and grave goods).	<p><i>Materials</i>” and Section 2.15 “<i>Protocols for Reporting Discoveries of Cultural Importance</i>” the CIMP (as described above in Mitigation Measure CUL-1a-8q) and Section 8.2 “<i>Treatment of Any Human Remains, Funerary Objects, Ceremonial Objects, and Items of Cultural Patrimony</i>” and Appendix D “<i>Plan of Action</i>” of the CHPMP (see below). Consistent with Section D.4 of the CHPMP, the determination of whether remains are human or non-human will be made by qualified personnel, such as a physical or forensic anthropologist. In accordance with the CHPMP Appendix D (D.3.3), the BLM is responsible for notifying the appropriate Interested Tribes regardless of land ownership. Discoveries on federal land shall follow the procedures outlined in sections D.3.3.1 and D.3.9.1 of Appendix D of the CHPMP. Discoveries on non-federal land in Arizona shall follow the procedures outlined in Sections D.3.3.2 and D.3.9.2 of Appendix D CHPMP. Discoveries on non-federal land in California shall follow the procedures outlined in Sections D.3.3.3 and D.3.9.3 of Appendix D of the CHPMP. The following provides a summary of the plans, procedures, and requirements that govern actions to be taken in the event of the discovery of human remains.</p> <p>CHPMP Appendix D – Sections D.3.3.1 and D.3.9.1 (discoveries on Federal land): Additional requirements of this section include:</p> <ul style="list-style-type: none"> • Complying with the Native American Graves Protection and Repatriation Act (NAGPRA) and its Federal implementing regulations outlined in 43 Code of Federal Regulations (CFR) Part 10, which requires establishing a chain of command for the remains, identifying and notifying lineal descendants, and consultation with the appropriate Tribe(s) to identify and implement appropriate treatment. • Following California Health and Safety Code 7050.5 et seq., which includes notifying the San Bernardino County coroner for discoveries in California and contacting the California Native American Heritage Commission (NAHC). • Following Public Resources Code 5097.98, which includes designation of a Most Likely Descendant by the NAHC and consultation with the MLD. <p>CHPMP Appendix D - Sections D.3.3.2 and D.3.9.2 (discoveries on non-Federal land in Arizona): Additional requirements of this section include:</p> <ul style="list-style-type: none"> • Contacting the Director of the Arizona State Museum (ASM) for discoveries in Arizona on “lands, other than lands owned or controlled by this state, any agency or institution of this state or any county or municipal corporations within this state.” • Complying with ARS 41-865, which includes consultation with the ASM, identifying the group with cultural affinity for the remains and/or objects, and consultation with the governing body of the group with cultural affinity to determine appropriate treatment and disposition of the remains and/or objects. 		<p>implementation of the mitigation measures outlined for Impact CUL-4, the Project could result in significant impacts on unknown human remains. Since no other feasible mitigation measures or alternatives are available to reduce this impact to a less than significant level, this impact remains significant and unavoidable despite the adoption of all feasible mitigation measures. DTSC further finds that complete avoidance of ground-disturbing activities that could disturb human remains is not feasible. This is because complete avoidance would prevent DTSC from realizing the fundamental Project objective to implement an active remediation system to clean up the contaminated groundwater plume.</p> <p>DTSC also finds that such changes or alterations are within the responsibility and jurisdiction of other public agencies (such as BLM) and not the agency (DTSC) making the finding. Such changes have been adopted by such other agencies or can and should be adopted by such other agencies. (CEQA Guidelines, Section 15091, subd. (a)(2).)</p> <p>Facts in Support of Finding: Implementation of the Project could disturb human remains, including those interred outside of formal cemeteries. The lack of any identified human remains in the Project Site does not preclude the possibility that unknown human remains may be present given the length of human occupation of the area. Ground-disturbing activities could unearth unknown human remains, which would be significant.</p> <p>In order to reduce this impact, Mitigation Measure CUL-4 shall be implemented (Final SEIR Volume 2, pp. 4.4-146-147).</p> <p>Mitigation Measure CUL-4 will reduce potential impacts to human remains, however, not to a less than significant level. As a result, any destruction or alteration of human remains to Native American Tribes would be significant. Therefore, impacts to human remains would remain significant and unavoidable.</p>

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	<p>CHPMP Appendix D - Sections D.3.3.3 and D.3.9.3 (discoveries on non-Federal land in California): Additional requirements of this section include:</p> <ul style="list-style-type: none"> Complying with California Health and Safety Code 7050.5 et seq., which requires notifying the San Bernardino County coroner for discoveries in California and contacting the NAHC. <p>Complying with Public Resources Code 5097.98, which includes designation of a MLD by the NAHC and consultation between the landowner and MLD to identify and implement appropriate treatment.</p>		
Geology, Soils, and Seismicity			
<p>Impact GEO-1a (Construction, Operation and Maintenance, and Decommissioning Impacts Related to Erosion of Soils): The proposed project could result in ground-disturbing activities that could alter the natural drainage patterns and erosion rates of the area (erosion impact). (FEIR, Volume 2, pp. 4.5-47 – 4.5-48).</p>	<p>Mitigation Measure GEO-1a: Construction, Operation and Maintenance, and Decommissioning Impacts Related to Erosion of Soils (Groundwater FEIR Measure).</p> <ol style="list-style-type: none"> A DTSC-approved grading and erosion control plan, prepared by a California Registered Civil Engineer, shall be completed prior to implementation of any grading in areas of the site where there is a potential for substantial erosion or loss of top soils. The plan shall outline specific procedures for controlling erosion or loss of topsoil during construction, operation and maintenance, and decommissioning. To ensure soils do not directly or indirectly discharge sediments into surface waters as a result of construction, operation and maintenance, or decommission activities, PG&E developed a SWPPP as discussed in mitigation measure HYDRO-1. The SWPPP identifies best management practices (BMPs) that would be used to protect stormwater runoff and minimize erosion during construction. PG&E shall prepare plans to control erosion and sediment, prepare preliminary and final grading plans, and shall prepare plans to control urban runoff from the project site during construction, consistent with the substantive requirements of the San Bernardino County Building and Land Use Services Department for erosion control. During road preparation activities, loose sediment shall be uniformly compacted consistent with the substantive San Bernardino County Building and Land Use Services Department requirements to aid in reducing wind erosion. Ongoing road maintenance including visual inspection to identify areas of erosion and performing localized road repair and regrading, installation and maintenance of erosion control features such as berms, silt fences, or straw wattles, and grading for road smoothness shall be performed as needed to reduce potential for erosion. Regarding the potential for contaminated soils to be eroded and contribute contamination into receiving waters, Mitigation Measures GEO-1a and HAZ-2 shall be implemented. Mitigation Measure GEO-1a provides the provisions for mitigating erosion through BMPs which shall be implemented. Mitigation Measure HAZ-2 provides the provisions for 	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that avoids this potentially significant environmental effect as identified in the Final SEIR.</p> <p>Facts in Support of Finding: The impact would be less than significant after implementing Mitigation Measure GEO-1a because the grading and compaction measures along with erosion control measures would be in place and maintained to control the water and wind erosion of on-site soils. (Final SEIR, Appendix IS, pp. IS-27).</p>

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	safe work practices and handling of contaminated soils as investigation derived wastes.		
Impact GEO-1b (Construction, Operation and Maintenance, and Decommissioning Impacts Related to Differential Compaction of Soils): The proposed project could result in ground-disturbing activities that could alter the natural drainage patterns and erosion of rates of the area (drainage patterns impact). (FEIR, Volume 2, pp. 4.5-47 – 4.5-49).	Mitigation Measure GEO-1b: Construction, Operation and Maintenance, and Decommissioning Impacts Related to Differential Compaction of Soils (Groundwater FEIR Measure). a) BMPs shall be implemented during construction, operation and maintenance, and decommissioning activities to minimize impacts on the affected areas. Such BMPs could include, but would not be limited to, the following: uniform compaction of roadways created for accessing the project area as per San Bernardino County Building and Land Use Services Department requirements, returning areas adversely affected by differential compaction to preexisting conditions when these areas are no longer needed, and continuing maintenance of access roads, wellhead areas, and the treatment facility areas. b) Work area footprints shall be minimized to the greatest extent feasible to limit the areas exposed to differential compaction. Where possible, existing unpaved access roads and staging/working areas shall be reused and maintained for different stages of the construction. New graded areas for staging or for access roads shall be compacted to a uniform specification, typically on the order of 90 to 95% compaction and consistent with substantive San Bernardino County Building and Land Use Services Department requirements to reduce differential compaction and subsequent erosion of site soils. c) After the completion of the operation and maintenance phase, the disturbed areas which result in increased potential for compaction shall be returned to their respective preexisting condition by regrading consistent with the preconstruction slopes as documented through surveys that may include topographic surveys or photo surveys. The areas will be returned to the surrounding natural surface topography and compacted consistent with unaltered areas near the access roads or staging areas in question. The habitat restoration plan prepared in compliance with mitigation measure BIO-1 includes restoration of native vegetation or other erosion control measures where revegetation would be infeasible or inadequate, for purposes of soil stabilization and erosion control of the Project Area.	Less than Significant	Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that avoids this potentially significant effect as identified in the Final SEIR. Facts in Support of Finding: The impact would be less than significant after implementing Mitigation Measure GEO-1b because unnatural erosion hazards caused by differential compaction will be addressed through uniform grading and compaction consistent with substantive San Bernardino County requirements, affected areas for which the Project increased the potential for erosion over original site conditions, BMPs will minimize the effect of component stages, and the extent of areas affected will be minimized to the extent feasible. (Final SEIR, Appendix IS, pp. IS-28)
Hazards and Hazardous Materials			
Impact HAZ-1: Spills or Releases of Contaminants during Construction, Operation and Maintenance, and Decommissioning Activities from Routine Transport, Use, and Disposal or the Reasonably Foreseeable Accidental Release of Hazardous Materials that could Expose Workers,	Mitigation Measure HAZ-1a: Spills or Releases of Contaminants during Operation and Maintenance Activities (Groundwater FEIR Measure with Revisions) a) PG&E shall store, handle, and transport hazardous materials in compliance with applicable local, state, and federal laws. b) All chemical storage and loading areas shall be equipped with proper containment and spill response equipment. BMPs to be implemented	Less than Significant	Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that avoid this potentially significant environmental effect as identified in the Final SEIR. Facts in Support of Finding: Implementation of Mitigation Measure HAZ-1a, HAZ-1b, and HAZ-2 would ensure compliance with applicable regulations regarding the safe transportation,

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
<p>the Public, or the Environment. Construction, operation and maintenance, and decommissioning of the proposed Project could result in the potential release of hazardous materials during use or delivery of hazardous materials as a result of component failure (e.g., valve, flange, or pipe), tank failure, or human error (e.g., tank overfilling).</p>	<p>may include, but are not limited to, use of secondary containment in mixing and storage areas; availability of spill kits and spill containment booms, and appropriate storage containers for containment of the materials generated during the spill response. The Final Remedy Design provides engineering drawings of chemical storage and loading areas in Appendix D, specifications in Appendix E, and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), which shall all be implemented during construction, and operation and maintenance, and decommissioning of the Project.</p> <p>c) A project-specific Hazardous Materials Business Plan (HMBP), chemical standard operating procedure (SOP) protocols and contingency plans shall be developed to ensure that proper response procedures would be implemented in the event of spills or releases. Specifically, the HMBPs and SOPs shall describe the procedures for properly storing and handling fuel on-site, the required equipment and procedures for spill containment, required personal protective equipment, and the measures to be used to reduce the likelihood of releases or spills during fueling or vehicle maintenance activities. BMPs to be implemented may include, but are not limited to, use of secondary containment in mixing and storage areas; availability of spill kits and spill containment booms, and appropriate storage containers for containment of the materials generated during the spill response. The field manager in charge of operations and maintenance activities shall be responsible for ensuring that these procedures are followed at all times. SOPs are provided in Appendix B to the C/RAWP (CH2M Hill 2015b); the HMBP in Appendix L to the Final Remedy Design (Operation and Maintenance Manual), Volume 1, Appendix E; and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), shall all be implemented during construction, and operation and maintenance, and decommissioning of the Project.</p> <p>Mitigation Measure HAZ-1b: Spill or Release of Contaminants during Construction and Decommissioning Activities (Groundwater FEIR Measure with Revisions)</p> <p>a) Fueling areas and maintenance areas would be supplied with proper secondary containment and spill response equipment. The Final Remedy Design provides engineering drawings of chemical storage and loading areas in Appendix D, specifications in Appendix E, and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), which shall all be implemented during construction, and operation and maintenance, and decommissioning of the Project.</p> <p>b) PG&E shall develop fueling SOP protocols and a contingency plan that would be implemented at all fueling areas on-site. The SOPs shall describe the procedures for properly storing and handling fuel on-site, the required equipment and procedures for spill containment, required PPE, and the measures to be used to reduce the likelihood of releases or spills during fueling or vehicle maintenance activities. Potential</p>		<p>storage, handling, and disposal of hazardous materials. In addition, the plans include procedures to respond to accidental spills and releases. Collectively, compliance with existing regulations and implementation of the plans as required by Mitigation Measures HAZ-1a, HAZ-1b, and HAZ-2 would ensure that impacts related to the routine use or accidental release of hazardous materials would be less than significant. Measures and plans would be in place to prevent spills of hazardous materials from occurring and to appropriately handle spills in the event that they occur on-site.</p> <p>The plans include procedures for the decommissioning of the Final Groundwater Remedy (Final Remedy Design Section ES.6), wells (C/RAWP Appendices B and F), and the disposal of materials, including hazardous and non-hazardous materials (Final Remedy Design Appendix L; C/RAWP Appendices B, D, F, L, M, and R). However, decommissioning of the Final Groundwater Remedy would not occur for decades in the future and therefore regulations and technology may evolve over time. Consequently, although the Final Remedy Design provides plans and procedures for hazardous material and waste management during construction, operation, and decommissioning of the Final Groundwater Remedy, a Final Decommissioning Plan for the Groundwater Remedy would have to be prepared decades in the future to address regulatory and technological changes for the proposed decommissioning procedures. For example, waste disposal acceptance criteria may become more stringent, resulting in additional material requiring disposal as hazardous waste as opposed to recycling or disposal as non-hazardous waste. This would be a potentially significant impact. With Mitigation Measure HAZ-3, this impact would be reduced to a less than significant level because measures and plans would be in place to manage hazardous materials generated from the decommissioning of the Final Groundwater Remedy Project (Final SEIR, Volume 2, pp. 4.5-25-4.5-30.)</p>

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	<p>measures include but are not limited to, fuel storage in bermed areas, performing vehicle maintenance in paved and bermed areas, and availability of spill kits for containment and cleanup of petroleum releases. The field manager in charge of construction and decommissioning activities shall be responsible for ensuring that these procedures are followed at all times. SOPs are provided in Appendix B (CH2M Hill 2015b); the HMBP in Appendix L (Operation and Maintenance Manual), Volume 1, Appendix E; and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), shall all be implemented during construction, and operation and maintenance, and decommissioning of the Project.</p> <p>c) PG&E shall comply with local, state, and federal regulations related to the bulk storage and management of fuels. The Final Remedy Design provides engineering drawings of chemical storage and loading areas in Appendix D; specifications in Appendix E (Operation and Maintenance Manual), Volume 3; the HMBP in Appendix L (Operation and Maintenance Manual), Volume 1, Appendix E; and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), which shall all be implemented during construction, and operation and maintenance, and decommissioning of the Project.</p> <p>Mitigation Measure HAZ-2: Reasonably Foreseeable Releases of Chemicals from Excavated or Disturbed Soil (Groundwater FEIR Measure with Revisions)</p> <p>Subsequent to the Groundwater FEIR and in compliance with Groundwater FEIR Mitigation Measure HAZ-2, PG&E developed a Final Construction Health and Safety Plan provided in C/RAWP, Appendix D, and a Draft Operation and Maintenance Health and Safety Plan in the Final Remedy Design, Appendix L, Volume 5. A final Operation and Maintenance Health and Safety Plan will be submitted to DTSC and DOI during the start-up phase of the remedy, and should include any separate plans provided by contractors. The health and safety plans include procedures to mitigate potential hazards, which include the use of PPE, measures that provide protection from physical and chemical hazards that may be present at the site, decontamination procedures, and worker and health and safety monitoring criteria to be implemented during construction. The worker health and safety plans includes protective measures and PPE that are specific to the conditions of concern and meet the requirements of the U.S. Occupational Safety and Health Administration's (OSHA's) construction safety requirements and Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120). In accordance with OSHA requirements, appropriate training and recordkeeping shall also be a part of the health and safety program. The health and safety plans shall be certified by a Certified Industrial Hygienist in accordance with OSHA regulations. The worker health and safety plan shall be provided to the construction workers for review and all workers shall be required to sign the plan, which will be kept on the construction site at all times. Contractors and subcontractors may also provide their own health and</p>		

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	<p>safety plans, providing the contractors and subcontractors health and safety plans are compliant with OSHA requirements and have been provided to PG&E and DTSC for review.</p> <p>Worker safety training shall occur prior to initiation of ground- disturbing activities. Training shall include the review of all health and safety measures and procedures. All workers and engineering inspectors at the site shall provide written acknowledgement that the soils management plan (discussed below), worker health and safety plan, and any existing community health and safety plan were reviewed and training was received prior to commencement of construction activities.</p> <p>The following are specific elements and directives that shall be included in the health and safety plan and implemented by PG&E during construction, operation and maintenance, and decommissioning of this project:</p> <ul style="list-style-type: none"> a) Vehicles traveling on unpaved roadways or surfaces would be directed to avoid traveling in areas where contaminated soils are known to be present; vehicle speeds shall be controlled (e.g., limited to 15 mph or slower) to limit generation of dust; measures, such as wetting of surfaces, will be employed to prevent dust generation by vehicular traffic or other dust-generating work activities. b) Pre-mobilization planning shall occur during which the likelihood of encountering contaminated soils shall be reviewed along with the Hazardous Materials Business Plan, site-specific health and safety plan, and SOPs so that the procedures are followed and the contingencies for handling contaminated soils are in-place prior to implementing the field operations. c) Should evidence of contaminated soil be identified during ground-disturbing activities (e.g., noxious odors, discolored soil), work in this area will immediately cease until soil samples can be collected and analyzed for the presence of contaminants as directed by the site supervisor or the site safety officer. Contaminated soil shall be managed and disposed of in accordance with the Project-specific health and safety plan and soil management plan. The health and safety plan and soil management plan shall be reviewed by DTSC before beginning any ground-disturbing activities. While the Project is exempt from the requirements of the San Bernardino County Division of Environmental Health, the health and safety plan shall be prepared in general accordance with the substantive requirements of this agency. d) In the event that drilling sites must be located within areas of suspected soil contamination, the appropriate PPE shall be worn by all personnel working in these areas and methods specified in the health and safety plan used to control the generation of dust. When working in these areas, personnel shall be required to follow all guidance presented in the site-specific health and safety plan and soil management plan. The site-specific health and safety plan shall include provisions for site control such as, but not limited to, delineation of the exclusion, contaminant 		

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	<p>reduction and support zones for each work area, decontamination procedures, and procedures for the handling of contaminated soils and other investigation derived wastes. Soil that is excavated shall be loaded directly into containers such as roll-off bins; dust suppression methods shall be used prior to and during loading of soils into the bins. Suspected contaminated soils shall be segregated from suspected uncontaminated soils.</p> <p>e) Personnel working at the site shall be trained in Hazardous Waste Operations.</p> <p>f) All soil excavated and placed in roll-off bins or trucks for transportation off-site shall be covered with a tarp or rigid closure before transporting, and personnel working in the area shall be positioned upwind of the loading location, as practicable.</p> <p>Mitigation Measure HAZ-3: Final Groundwater Remedy Decommissioning Plan (New Measure)</p> <p>Upon achieving the Remedial Action Objectives for the groundwater remedy, PG&E shall provide a written request with documentation to the DTSC and DOI requesting approval for decommissioning the groundwater remedy. Upon approval from DTSC and DOI, PG&E shall then prepare and submit a Final Groundwater Remedy Decommissioning Plan within 120 days to DTSC and DOI for their review and approval. This plan shall comply with the requirements in the Programmatic Agreement (BLM 2010), the Cultural and Historic Properties Management Plan (BLM 2012), the Consent Decree and Appendix C, Scope of Work, to Consent Decree (DOI 2013) (or functional equivalent if those document names change in the future), and the mitigation measures included within this SEIR. This plan shall include the decommissioning specifications and procedures currently described in the Final Remedy Design, but shall be updated to incorporate technology and regulatory changes, if any. In particular, the updated Final Groundwater Remedy Decommissioning Plan shall check for updates to waste disposal acceptance criteria to identify the appropriate disposal or recycling facilities for the Final Groundwater Remedy infrastructure to be removed, and for changes in well abandonment procedures by regulatory agencies (the States of California and Arizona, and the Counties of San Bernardino [California] and Mohave [Arizona]).</p>		
Hydrology and Water Quality			
Impact HYDRO-1: Exceedance of Water Quality Standards, Violation of Waste Discharge Requirements, or Degradation of Water Quality. The ground disturbing activities associated with constructing the Final Groundwater Remedy Project, use of carbon substrate to be injected into the aquifer or the use of	Groundwater FEIR Mitigation Measure HYDRO-1, Exceedance of Water Quality Standards (Groundwater FEIR Measure with Revisions). Mitigation Measures HYDRO-1a/2a/3a: Construction Best Management Practices Plan (Groundwater FEIR Measure with Revisions). Subsequent to the Groundwater FEIR and as noted in the Regulatory Background, the Construction General Permits were updated for California (2014) and Arizona (2013). In compliance with the Groundwater FEIR Mitigation Measures HYDRO-1, HYDRO-2, and HYDRO-3, and incorporating the	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that avoid potentially significant environmental effects as identified in the Final SEIR.</p> <p>Facts in Support of Finding: Implementation of Mitigation Measure HYDRO-1a/2a/3a, HYDRO-4, HYDRO-5 and HYDRO-6 would minimize Project impacts associated with the use of carbon substrate to be injected into the aquifer or the use</p>

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<p>Arizona freshwater, the generation of byproducts above water quality objectives, the discharge of remedy-produced water to the TCS Evaporation Ponds, and runoff associated with the soils stockpiling could result in the exceedance of water quality standards, violation of waste discharge requirements, or substantial degradation of water quality.</p>	<p>construction general permit updates, PG&E prepared a BMP Plan for construction activities (C/RAWP, Appendix M; CH2M 2015b). The BMP Plan complies with the substantive requirements of the California and Arizona Construction General Permits, as well as all other applicable federal, state, and local permit and regulatory requirements, even if a permit is not required pursuant to CERCLA, for purposes of ensuring the protection of receiving water quality. Details of the BMPs are provided in the BMP Plan and are summarized below. Site workers shall be trained in the implementation of these BMPs.</p> <p><u>Erosion Control BMPs</u>: The following measures shall be used to reduce erosion and control sediment:</p> <ul style="list-style-type: none"> • <u>Preservation of Existing Vegetation</u> – Existing vegetation will be preserved to the maximum extent practicable to facilitate protection of surfaces from erosion and help control sediments. To the extent practical, remedy facilities have been located on previously disturbed areas. In the event that existing vegetation needs to be disturbed, areas that need to be preserved will be identified by a qualified biologist and marked with temporary fencing. Site workers will be informed of the limits of disturbance within the construction site and will be instructed to keep clear of delineated areas. • <u>Geotextiles and Mats</u> – Natural (e.g., excelsior, straw, coconut) or synthetic (usually polyethylene) materials will be used to reduce soil erosion by wind or water. • <u>Road Preparation and Maintenance</u> – During road preparation activities, loose sediment will be uniformly compacted, consistent with the substantive San Bernardino County Building and Land Use Services Department requirements, to aid in reducing wind erosion. Ongoing road maintenance will include: (1) visual inspections to identify areas of erosion, (2) localized road repair and regrading, installation, and maintenance of erosion control features such as berms, silt fences, or straw wattles, (3) grading for road smoothness, and (4) measures to reduce water erosion, such as clearing ditches and culverts of debris. <p><u>Sediment Control BMPs</u> – The following materials would be used to retain sediment in place where soil is being disturbed by construction processes, to intercept runoff and reduce flow velocity, and to allow sediment to settle from runoff before water leaves the construction site.</p> <ul style="list-style-type: none"> • <u>Silt Fences</u> – Silt fences are typically used in combination with sediment basins and sediment traps as erosion control measures. • <u>Fiber Rolls/Sediment Wattles</u> – These consist of aspen wood excelsior, straw, flax, or other similar materials rolled and bound into tight tubular rolls and placed on the face of slopes at regular intervals, depending on steepness of slopes. Fiber rolls/sediment wattles will be inspected prior to a forecasted rain event and after rain events to ensure the fiber rolls 		<p>of Arizona freshwater, the generation of byproducts above water quality objectives, the discharge of remedy-produced water to the TCS Evaporation Ponds, and runoff associated with the soils stockpiling impact to a level of less than significant. (Final SEIR, Volume 2, pp. 4.6-53 - 4.6-64.)</p>

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	<p>are working properly. Sediment accumulated by the fiber rolls will be removed to maintain the effectiveness of the fiber rolls.</p> <ul style="list-style-type: none"> • <u>Gravel Bag Berms</u> – Gravel bag berms can be used as an alternative to fiber rolls and sediment wattles. If used, they will be installed prior to rain events to form a barrier to intercept runoff or reduce its velocity. Gravel bags will also be used, if necessary, during trenching activities when stockpiles are on-site. In the event that gravel bag berms are used as perimeter erosion control, bags will be stacked, one on top of the other (two high). When used to anchor stockpiles, the bags will be placed one high. • <u>Sandbag Berms</u> – Sandbag berms can also be used as an alternative to fiber rolls and sediment wattles. If used, they will be installed prior to rain events to form a barrier to intercept runoff or reduce its velocity. Sandbags will also be used, if necessary, during trenching activities when stockpiles are left overnight. In the event that sandbag berms are needed, they will be placed around the staging area and trenching area. • <u>Straw-Bale Barriers</u> – Straw-bale barriers can also be used as an alternative to fiber rolls, gravel bag berms, and sandbag berms. <p><u>Material Delivery and Storage</u> – Proper management practices for delivery and storage of materials will be implemented to ensure minimal discharge or elimination of discharge of these materials to the storm drain systems or waterways. Construction materials and equipment will be parked and stored in the staging area. Materials subject to erosion from rain events within the storage area will be covered during nonworking days and prior to and during rain events. Storage and transfer of toxic or hazardous materials (e.g., ethanol, acids for well cleaning) will be on impervious surfaces appropriate to the stored materials.</p> <p><u>Material Use</u> – Proper use of materials will be implemented to ensure minimal or complete elimination of discharge to the storm drain systems or waterways. Spill cleanup materials will be kept near the construction and staging areas. Leaks and spills will be cleaned up immediately using proper absorbent materials, which will then be disposed of as hazardous waste, unless determined to be non-hazardous waste.</p> <p><u>Stockpile Management</u> – Stockpile management was discussed above in “Runoff from Soil Stockpile at Soil Processing Area.”</p> <p><u>Spill Prevention and Control</u> – Spill prevention and control procedures and practices will be implemented in conjunction with the Waste Management Plan to prevent and control spills anytime chemicals and/or hazardous materials are stored on the construction site. Leaks and spills will be immediately cleaned up to the extent possible using absorbent materials, which will then be disposed of properly. Leaks and spills shall not be covered and/or buried or washed with water. Kits with appropriate spill response equipment will be kept near the construction and staging areas. The materials used for cleaning will not be allowed to enter storm drains or watercourses</p>		

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	<p>and will be collected and disposed of in accordance with BMPs. In particular, absorbents used to clean up spills of hazardous materials or waste must be managed as hazardous waste unless characterized as non-hazardous.</p> <p><u>Solid Waste Management</u> – Solid waste management procedures and practices will be implemented at the beginning and throughout the Project. Solid waste, consisting primarily of asphalt concrete waste, shall be loaded directly onto trucks for off-site disposal. Loose debris will be picked up daily. Trash and scrap receptacles shall be placed at convenient locations to promote proper disposal of solid wastes. Receptacles shall be provided with lids or covers to prevent windblown litter. Hazardous wastes shall be accumulated at appropriate collection locations following appropriate labeling and management requirements pursuant to Title 22, California Code of Regulations.</p> <p><u>Concrete Waste Management</u> – Concrete waste management procedures will be implemented where concrete is used as a construction material or where concrete dust and debris result from demolition activities. The concrete waste containers will be placed a minimum 50 feet from any drainage ways. Washouts will include secondary containment so that there is no discharge into the underlying soil and onto the surrounding areas. Watertight containers with lids and secondary containment, manufactured for the expressed purpose of containing waste concrete and its liquid residue, may be used. Containers will be emptied or removed from the project site when 75 percent of the full capacity has been reached.</p> <p><u>Sanitary/Septic Waste Management</u> – Sanitary/septic waste management procedures and practices are implemented at construction sites when a temporary or portable sanitary/septic waste system exists. Sanitary facilities will be located away from Staging Areas 6 and 7 (due to proximity to culturally sensitive areas), drainage facilities, waterways, and from traffic circulation. In the event of high winds or a risk of high winds, temporary sanitary facilities will be secured with spikes or weighed down to prevent overturning. The sanitation subcontractor will monitor on-site sanitary/septic waste storage and disposal procedures on a weekly basis in accordance with the sanitary/septic waste management BMPs. Wastewater will not be discharged or buried. Waste will be removed and disposed off-site. Regular waste collection should be arranged before facilities overflow. The sanitary facility will be located a minimum of 50 feet away from drainage facilities and away from waterways and traffic circulation.</p> <p><u>Liquid Waste Management</u> – Liquid waste management procedures will be employed to prevent the discharge of pollutants from liquid waste to the storm drain systems or watercourses. Liquid waste management will be applied if non-hazardous residuals or wastes are generated by construction activities.</p> <p><u>Tracking Control BMPs</u> – A temporary construction entrance is defined as a stabilized point of entrance/exit to a construction site to reduce the tracking of mud and dirt onto private or public paved roads by construction vehicles.</p>		

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	<p>A temporary construction entrance will be established at applicable paved intersections and entry points to prevent sediment tracking. The temporary construction entrance will be inspected routinely.</p> <p><u>Good Housekeeping BMPs</u> – Good housekeeping measures will be implemented on-site for the duration of the project and include the following:</p> <ul style="list-style-type: none"> • Store chemicals in watertight containers (with appropriate secondary containment) in a completely enclosed storage cabinet, trailer, or sealed drums shed to prevent spillage and leakage. • Minimize exposure of construction materials to precipitation. • Cover waste disposal containers at the end of every business day and during rain events. • Prevent discharges from waste disposal containers to the stormwater drainage system or receiving water. • Prevent oil, grease, or fuel from leaking into the ground, storm drains, or surface waters. • Immediately clean up leaked material and dispose of properly. • Establish and maintain effective perimeter controls and stabilize construction entrances and exits to control erosion and sediment discharges from the site. • Conduct regular stormwater tailgate meetings with the workforce when the project is staffed and work is under way. <p>Mitigation Measure HYDRO-1b/2b/3b: O&M SWPPP (Groundwater FEIR Measure with Revisions). Subsequent to the Groundwater FEIR and in compliance with the Groundwater FEIR Mitigation Measures HYDRO-1, HYDRO-2, and HYDRO-3, PG&E prepared a SWPPP for operation and maintenance activities (O&M SWPPP; Final Remedy Design, Appendix L, Volume 1, Appendix D; CH2M Hill 2015a) to comply with the substantive requirements of the 2015 California General Industrial Storm Water Permit. The O&M SWPPP requires the BMPs summarized below. Site workers shall be trained in the implementation of these BMPs.</p> <p>Good Housekeeping, including:</p> <ul style="list-style-type: none"> • Observe all outdoor areas associated with industrial activity; including storm water discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by off-facility materials or storm water run-on to determine housekeeping needs. Clean and dispose of properly any identified debris, waste, spills, tracked materials, or leaked materials • Minimize or prevent material tracking • Minimize dust generated from industrial materials or activities • Ensure that all facility areas impacted by rinse/wash waters are cleaned as soon as possible 		

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
	<ul style="list-style-type: none"> • Cover all stored industrial materials that can be readily mobilized by contact with storm water • Contain all stored non-solid industrial materials or wastes that can be transported or dispersed by the wind or contact with storm water • Prevent disposal of any rinse/wash waters or materials into the storm water conveyance system • Minimize stormwater discharges from non-industrial areas (e.g., stormwater flows from employee parking area) that contact industrial areas of the facility • Minimize authorized non-storm water discharges from non-industrial areas (e.g., potable water, fire hydrant testing) that contact industrial areas of the facility <p>Preventive Maintenance, including:</p> <ul style="list-style-type: none"> • Identify all equipment and systems used outdoors that may spill or leak pollutants • Observe the identified equipment and systems to detect leaks, or identify conditions that may result in the development of leaks • Establish inspection schedule and maintenance schedule of identified equipment and systems • Establish procedures for prompt maintenance and repair of equipment, and maintenance of systems when conditions exist that may result in the development of spills or leaks <p>Material Handling and Waste Management, including:</p> <ul style="list-style-type: none"> • Prevent or minimize handling of industrial materials or wastes that can be readily mobilized by contact with stormwater during a storm event • Contain all stored non-solid industrial materials or wastes that can be transported or dispersed by the wind, erosion or contact with stormwater during handling • Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use • Divert run-on and stormwater generated from within the facility away from all stockpiled materials • Clean all spills of industrial materials and/or wastes that occur during handling • Observe and clean as appropriate, any outdoor material/ or waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes <p>Erosion and Sediment Controls, including:</p> <ul style="list-style-type: none"> • Implement effective wind erosion controls 		

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	<ul style="list-style-type: none"> • Provide effective stabilization for inactive areas, finished slopes, and other erodible areas prior to a forecasted storm event • Maintain effective perimeter controls and stabilize all site entrances and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site • Divert run-on and storm water generated from within the facility away from all erodible materials <p>The Industrial General Permit requires that the site, to the extent feasible, implement and maintain any advanced BMPs necessary to reduce or prevent discharges of pollutants in its stormwater discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability. Advanced BMPs may include:</p> <ul style="list-style-type: none"> • Exposure Minimization BMPs (such as storm resistant shelters that prevent the contact of stormwater with the industrial materials or areas of industrial activity) • Storm Water Containment and Discharge Reduction BMPs that divert, infiltrate, reuse, contain, retain, or reduce the volume of stormwater runoff • Treatment Control BMPs (the implementation of one or more mechanical, chemical, biologic, or any other treatment technology) • Storm resistant shelters (i.e., buildings) for Operations at the TW Bench, Hazardous Materials storage at the TCS, and Carbon Amendment facilities at the MW-20 Bench • Storm water drainage at the TW Bench to divert stormwater run on and reduce the volume of stormwater runoff • Features in access roads to reduce erosion and divert storm water from remedy facilities such as wells and associated control equipment <p>Mitigation Measure HYDRO-4: Manganese Treatment System (New Measure). Sampling as described in the Final Remedy Design, specifically in the Sampling and Monitoring Plan provided in the Operation and Maintenance Manual (CH2M Hill 2015a, Appendix L), shall be implemented throughout the duration of the groundwater remedy and shall include groundwater monitoring for manganese. If manganese exceeds concentrations as specifically identified in Table 2.2-1 of Appendix L, O&M Volume 2 (e.g., 1 to 2.5 mg/L at California wells downgradient of the IRZ, or above baseline concentrations in Arizona wells), then PG&E shall evaluate and implement operational modifications to control the manganese in accordance with Section 2, O&M Volume 2. If operational modifications are unsuccessful at decreasing manganese concentrations to below the action levels cited on the above-referenced Table 2.2-1 and as determined by DTSC, then the contingency measure of manganese treatment shall be implemented. As described in the Project Description (Section 3.6.3.1) of this SEIR and in Appendix J of the Final Remedy Design, PG&E shall implement</p>		

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	<p>manganese treatment using the Dissolved Metals Removal System in the Remedy-Produced Water Conditioning Plant if capacity is available or install an adsorptive or greensand filtration treatment system (or equivalent) preferentially located at the Remedy-Produced Water Conditioning Plant if space is available. If capacity and space are not available at the Remedy-Produced Water Conditioning Plant, the manganese treatment system could be located at the TW Bench or the MW-20 Bench (after the IM-3 system is decommissioned/removed). A manganese treatment system shall remain operational until the manganese concentrations remain below concentrations identified in Table 2.2-1 and DTSC approves of the cessation of the system.</p> <p>Mitigation Measure HYDRO-5: Contingent Freshwater Pre-Injection Treatment (New Measure). To implement the Final Groundwater Remedy such that PG&E will be able to respond to the triggering conditions described below, PG&E shall implement the following measures.</p> <p>Mitigation Measure HYDRO-5a: Incorporate Arsenic Monitoring of Freshwater Injection into the Sampling and Monitoring Plan (New Measure). Sampling as described in the Final Remedy Design, specifically in the Sampling and Monitoring Plan provided in the Operation and Maintenance Manual (CH2M Hill 2015a, Appendix L), shall be implemented throughout the duration of the groundwater remedy, even after injection ceases. Wells used to monitor freshwater supply injection shall be sampled and analyzed in accordance with the Project monitoring program for arsenic and other chemicals as described in the Sampling and Monitoring Plan. PG&E shall install and monitor wells designated in the Final Remedy Design for arsenic monitoring located approximately 150 feet and 225 feet from each freshwater injection well to comply with the SWRCB's requirements for freshwater injection with arsenic concentrations above the California MCL. Monitoring shall commence prior to freshwater injection and continue until observed arsenic concentrations return to pre-injection levels pursuant to Mitigation Measure HYDRO 5d. Monitoring wells for the freshwater injection area shall initially be sampled monthly for the first two quarters, then quarterly thereafter, unless the monitoring interval is modified with prior DTSC approval. The results of this monitoring shall determine whether Mitigation Measures HYDRO-5b and 5c are implemented.</p> <p>Mitigation Measure HYDRO-5b: Assessment and Implementation of Interim Action if the California MCL is Exceeded 150 Feet Radially from Freshwater Injection Point (New Measure). If, as a result of the monitoring required in Mitigation Measure HYDRO-5a, the concentration of arsenic at the leading edge of the arsenic plume is found to exceed the arsenic water quality objective (California MCL) 150 feet radially from the freshwater injection point, PG&E shall immediately reassess their groundwater modeling and identify interim actions to limit the migration of the arsenic plume. PG&E shall submit the assessment and proposed action to DTSC within 60 days (or other timeframe directed by DTSC) of confirmed detections above water quality objectives.</p>		

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	<p>Mitigation Measure HYDRO-5c: Implementation of Alternatives if California MCL is Exceeded for Arsenic 225 feet from any Freshwater Injection Point (New Measure). If the concentration of arsenic at the leading edge of the plume migrates and exceeds the water quality objective (California MCL) at 225 feet radially from the freshwater injection point, PG&E shall promptly notify DTSC and resample within 30 days. If the expedited resample confirms the exceedance, PG&E shall immediately cease fresh water injection. The injection shall not recommence until PG&E either blends the water source to below the California MCL at the point of injection; constructs and re-routes any contingent freshwater supply lines and appurtenances to the Contingent Freshwater Pre-Injection Treatment System to pre-treat the water and remove arsenic before injection; or proposes a new water source that will comply with the California water quality objectives for injection. PG&E shall obtain approval from DTSC prior to implementation of the options identified above. Pre-injection treatment of the freshwater shall continue until further monitoring indicates that pre-treatment is no longer needed and DTSC approves of cessation of pre-treatment.</p> <p>Mitigation Measure HYDRO-5d – Post-Remedy Arsenic Monitoring (New Measure). The SWRCB provided remedy requirements associated with injection of groundwater containing naturally occurring arsenic in a 2013 position letter (SWRCB 2013). To ensure that water quality objectives are not exceeded in groundwater within freshwater injection areas after completion of the remedy, sampling of the arsenic monitoring wells and possibly other wells (as directed by DTSC) would continue under the Sampling and Monitoring Plan for an estimated 20 years and possibly longer after completion of active treatment to ensure that arsenic concentrations are within and remain at pre-remedy background levels. The sampling would cease after results demonstrate that the concentrations of arsenic remain within water quality objectives and DTSC approves of ceasing the monitoring for arsenic.</p> <p>Mitigation Measure HYDRO-6, Protection of Non-Project Water Supply Wells (New Measure). To minimize any potential impacts to non-Project water supply wells associated with the long-term operation and maintenance of the Final Groundwater Remedy Project, PG&E shall implement the mitigation measure described below.</p> <p>Mitigation Measure HYDRO-6a: Incorporate Non-Project Water Supply Wells and/or Additional Monitoring Wells into the Monitoring Program (New Measure).</p> <ul style="list-style-type: none"> For water supply wells located within about one mile of HNWR-1A (currently Topock-2, Topock 3, Marina-1, Sanders, Smith, PGE-9N, PGE-9S, MTS-1, MTS-2, and GSRV-2), PG&E shall request well construction information and access to sample, test and assess current well conditions. If access is granted, PG&E shall add the non-Project water supply wells to the monitoring program (Appendix L, O&M Volume 2, Sampling and Monitoring Plan, Section 5.4). If access is denied, PG&E will alert DTSC of such response in a timely manner and 		

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	<p>provide associated documentation. If the well owner does not otherwise respond within 60 days, PG&E shall initiate a second request. If the well owner still does not respond, PG&E will alert DTSC of such response in a timely manner and provide documentation of both attempts to contact the owner. If new water supply non-Project wells are installed or discovered in the general area in the future, DTSC may direct PG&E to take additional action for access and add them to the wells listed above at any time.</p> <ul style="list-style-type: none"> PG&E shall submit a well installation work plan to DTSC describing installation of a new nested monitoring well located between HNWR-1 and wells Topock-2/Topock-3 since wells Topock-2/Topock-3 are currently the largest producing non-Project supply wells in the area. The work plan shall also propose the installation of any additional monitoring wells that are needed to ensure protection of the water resource in the vicinity of the non-Project water supply wells. PG&E shall submit the well installation work plan to DTSC within twelve months of DTSC's approval of the remedy design and would be implemented only after DTSC's review and approval. Up to ten well locations from the total borehole count evaluated in this SEIR can be allocated for the monitoring of water quality to protect non-Project water supply wells. Overtime, wells may be added to or removed from the monitoring program (with prior DTSC approval) based on accumulated data or lack thereof. Monitoring of wells identified in this mitigation measure shall initially be quarterly for the first two years of operation and include groundwater levels and chemical constituents to establish baseline conditions and assess seasonal variations in the area of the non-Project water supply wells and monitoring wells. Pressure transducers shall be fitted to monitoring wells, Well HNWR-1, Site B, and the above-listed non-Project water supply wells (some which are not currently pumping) to track and evaluate pumping effects over time and to assist with assessments required below in Mitigation Measure HYDRO-6b and 6c. Chemical testing shall include, at a minimum, Title 22 metals, Cr(VI), stable isotopes of hydrogen and oxygen, general minerals, and TDS. After the second year of monitoring, sampling frequencies may be reduced to semi-annually for two additional years and annually thereafter with DTSC approval. The well network, monitoring frequency, pressure transducer monitoring, and chemical constituents may be modified with DTSC approval. <p>Mitigation Measure HYDRO-6b: Water Supply Mitigation (New Measure).</p> <ul style="list-style-type: none"> If non-pumping groundwater elevations substantially decrease from baseline conditions established under HYDRO-6a in a monitored non-Project water supply well (e.g., below top of well screen, below pump depths, or causes significant decrease in well yield) or a similar 		

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	<p>groundwater elevation decrease is observed in a water resource protection monitoring well described in HYDRO-6a, PG&E shall inform DTSC as soon as practicable and no longer than two weeks (unless modified with DTSC approval) after receipt of data documenting such an event. Additionally, PG&E will assess well and aquifer conditions to evaluate if the Project has caused a substantial decrease in groundwater elevations/well yield. PG&E shall promptly provide its assessment to DTSC for review. At a minimum, the assessment shall consider the following conditions:</p> <ul style="list-style-type: none"> ○ Historical well usage ○ Well condition ○ Anticipated drawdown effects ○ Regional groundwater level trends <ul style="list-style-type: none"> • If PG&E or DTSC determines that the Project has adversely impacted a non-Project water supply well to the extent that the Project is determined to be the primary cause, or one of the primary contributing causes, of the reduction in well yield or elevation such that the well does not provide sufficient water, PG&E shall promptly notify the well owner. PG&E shall coordinate with the well owner(s) to arrange for an interim drinking water supply if necessary, and develop a plan (for DTSC approval) which will assist in restoring the water resource by using measures that may include: <ul style="list-style-type: none"> ○ Lowering the well pump ○ Rehabilitating the well ○ Deepening the existing well ○ Providing short and/or long term replacement of water supply ○ Constructing a new replacement well, ○ Modifying remedy operations (e.g., placing a packer in HNWR-1A) <p>An alternate course of action may be considered, provided it is mutually agreeable to DTSC, PG&E, and the well owner.</p> <p>Unless an alternative period is approved by DTSC, the plan/alternate course of action should be provided to DTSC for approval within 30 days of determining that the Project adversely impacted a non-Project water supply well.</p> <p>Mitigation Measure HYDRO-6c: Water Quality Mitigation (New Measure).</p> <ul style="list-style-type: none"> • If the groundwater quality of a non-Project water supply well deteriorates by exceeding water quality objectives (e.g., MCLs for drinking water wells) and baseline conditions established pursuant to HYDRO-6a, PG&E will immediately notify DTSC and DOI and take steps to collect confirmation samples from the well within 60 days of original sample collection unless modified with DTSC approval. PG&E 		

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	<p>shall identify/confirm the specific uses of the well and inform DTSC, DOI, the Arizona Department of Environmental Quality, and the well owner of the deterioration as soon as possible (e.g., within 7 days of receiving confirmation samples results). This shall include PG&E providing both the initial and confirmation sample data to agencies and well owner even if the initial exceedance is not confirmed.</p> <ul style="list-style-type: none"> If PG&E or DTSC determines that the Project has adversely impacted a non-Project water supply well to the extent that the Project is determined to be the primary cause, or one of the primary contributing causes, of the reduction in water quality, PG&E shall immediately notify the well owner. PG&E shall coordinate with the well owner(s) to arrange for an interim drinking water supply if necessary, and develop a plan (for DTSC approval) which will assist in restoring the water resource by using measures which may include: <ul style="list-style-type: none"> Deepening the existing well Providing short and/or long term replacement of water supply Constructing a new replacement well Conducting water treatment, Modifying remedy operations (e.g., placing a packer in HNWR-1A) An alternate course of action may be considered, provided it is mutually agreeable to DTSC, PG&E and the well owner. <p>The plan/alternate course of action should be provided to DTSC for approval within 30 days, unless modified with DTSC approval, of determining that the Project adversely impacted a non-Project water supply well.</p> <p>If the groundwater quality of any well installed as part of HYDRO-6a deteriorates by exceeding water quality objectives (e.g., MCLs for drinking water wells) and baseline conditions, PG&E shall conduct confirmation sampling and promptly assess aquifer conditions to evaluate if the Project has adversely impacted the well. PG&E shall promptly inform DTSC, DOI, and the Arizona Department of Environmental Quality of any adverse impacts and provide an assessment with any recommendations for review and approval.</p>		
<p>Impact HYDRO-2: Drainage Pattern Alterations. The proposed Project would require the construction of wells, piping corridors, buildings, and associated infrastructure that could alter the existing drainage system that could result in a substantial increase of erosion and siltation or flooding on and off the Project Area.</p>	Implementation of Mitigation Measures HYDRO-1 and HYDRO-2 .	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into the Project that avoid this potentially significant environmental effect as identified in the Final SEIR.</p> <p>Facts in Support of Finding: Implementation of appropriate BMPs defined in Mitigation Measures HYDRO-1 and HYDRO-2 would minimize impacts on water quality by controlling erosion and siltation. Consequently, any impacts associated with erosion and siltation resulting from alterations of drainage and hydrology and water quality during construction, operation and maintenance, and decommissioning would be mitigated to a less</p>

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			than significant level (Final SEIR, Volume 2, p. 4.6-64-4.6-67).
Impact HYDRO-3: Polluted Stormwater Runoff. The proposed Project does not include discharge to an existing or planned stormwater drainage system. The Project does have the potential to contribute substantial additional sources of polluted runoff if materials and operations are not properly handled.	Implementation of Mitigation Measure HYDRO-1.	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that avoid this potentially significant environmental effect as identified in the Final SEIR.</p> <p>Facts in Support of Finding: Implementation of appropriate BMPs defined in Mitigation Measure HYDRO-1 would minimize impacts on water quality by controlling potential pollutants, including sediment, and runoff discharges from the Project area. Consequently, any impacts associated with pollutants discharging into existing or planned stormwater drainage systems would be mitigated to a less than significant level (Final SEIR, Volume 2, pp. 4.6-67.)</p>
Noise			
Impact NOISE-1: Long-Term Operational-Related Non – Transportation Noise and Vibration Impacts. Construction activities associated with the Future Activity Allowance that could occur during long-term operation and maintenance could result in noise levels that exceed applicable standards.	<p>Mitigation Measure NOISE-2: Potential Impacts to Noise Levels and Noise Standards (Groundwater FEIR Measure with Revisions).</p> <ul style="list-style-type: none"> Construction equipment shall be properly maintained per manufacturer specifications and fitted with the best available noise-suppression devices (e.g., mufflers, silencers, wraps). All impact tools shall be shrouded or shielded, and all intake and exhaust ports on power equipment shall be muffled or shielded. Construction equipment shall not idle for extended periods of time (more than 15 minutes) when not being utilized during construction activities. A notable exception is when a support vehicle is needed to remain running for health and safety reasons (i.e., air conditioning), consistent with health and safety procedures. Construction activities shall include, but not limited to, the use of berms, stockpiles, dumpsters, and/or bins to shield the nearest noise-sensitive receptor adjacent to construction activities to within acceptable non-transportation noise level standards. When construction activities are conducted within the distances outlined earlier (i.e., 1,850 feet and 5,830 feet from California receptors and 330 feet and 735 feet from Arizona receptors for daytime and nighttime noise, respectively) relative to noise-sensitive uses in the project area, noise measurements shall be under the supervision of a qualified acoustical consultant at the nearest noise-sensitive land use relative to the construction activities with a sound level meter that meets the standards of the American National Standards Institute (ANSI Section S14 1979, Type 1 of Type 2) to ensure that construction noise associated with the project component complies with applicable daytime and nighttime noise standards. Coordination with the Tribes and appropriate landowner(s) shall occur to allow opportunity for input in determining noise monitoring locations. If noise levels are still determined to exceed noise standards, temporary 	Significant and Unavoidable	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that substantially lessens noise impacts, but not to a less than significant level. Even with the implementation of the mitigation measures outlined for Impact NOISE-2, the Project would result in noise levels that exceed applicable standards associated with the Future Activity Allowance that could occur during long-term operation and maintenance. Since no other feasible mitigation measures or alternatives are available to reduce this impact to a less than significant level, this impact remains significant and unavoidable despite the adoption of all feasible mitigation measures. DTSC further finds that complete avoidance of direct and indirect noise effects of the Project associated with the Future Activity Allowance is not feasible. This is because complete avoidance would prevent DTSC from realizing the fundamental Project objective to implement an active remediation system to clean up the contaminated groundwater plume.</p> <p>Facts in Support of Finding: DTSC has determined that construction activities associated with the Future Activity Allowance that could occur during long-term operation and maintenance could result in noise levels that exceed applicable standards. As a result, this impact would be significant.</p> <p>In order to reduce this impact Mitigation Measure NOISE-2 shall be implemented.</p> <p>Implementation of Mitigation Measure NOISE-2 will ensure that noise generated during construction activities associated with the Future Activity Allowance will be minimized and that activities will be limited to daytime hours. However, existing</p>

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	<p>engineered acoustical barriers shall be erected as close to the construction activities as feasible, breaking the line of sight between the source and receptor where noise levels exceed applicable standards. Coordination with the Tribes shall occur in a manner consistent with the Cultural Impact Mitigation Program (CIMP; see Appendix H to the C/RAWP) throughout all Project phases, including input in determining constraints in locating temporary noise barriers to avoid or minimize physical impact to cultural resources. All acoustical barriers shall be constructed with material having a minimum surface weight of 2 pounds per square foot or greater and a demonstrated Sound Transmission Class (STC) rating of 25 or greater as defined by the American Society for Testing and Materials' Test Method E90. Placement, orientation, size, and density of acoustical barriers shall be specified by, or under the direct supervision of, a qualified acoustical consultant.</p> <ul style="list-style-type: none"> A disturbance coordinator shall be designated by the PG&E, which will post contact information in a conspicuous location near groundwater project activity areas so that it is clearly visible to nearby noise-sensitive receptors as identified in Figure 4.7-1 and Interested Native American Tribes (Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, and the Hualapai Indian Tribe). The coordinator will manage and thoroughly investigate complaints resulting from the Project-related noise to ensure resolution. Reoccurring disturbances will be evaluated by a qualified acoustical consultant retained by PG&E to ensure compliance with applicable standards. Noise complaints shall be reported to DTSC as soon as practicable and no more than 72 hours upon receipt of complaint. Resolutions will be recorded, tracked, and reported to DTSC on a monthly basis. The disturbance coordinator will contact nearby noise-sensitive receptors as labeled in Figure 4.7-1 and Interested Tribes, advising them of the Project activity schedule. The disturbance coordinator will also consider the timing of Project activities in relation to Tribal ceremonial events that are sensitive to noise in a manner consistent with the Cultural Impact Mitigation Program (CIMP) Section 2.11 (see Appendix H to the C/RAWP). This shall be achieved in part through annual project update mailings (could be combined with other annual project mailings) to potentially impacted owners/occupants of sensitive land uses to give notice of possible disturbances and impacts. The mailing shall also identify the disturbance coordinator's contact information. 		<p>noise-sensitive land uses will still experience increased noise levels due to Project activities for short term periods. The Project could exceed applicable County standards for a place of worship and would consequently result in a temporary substantial increase in ambient noise levels. The unique values associated with the Topock TCP cannot be reconciled with additional Project-related noise. Even after mitigation, this impact would remain significant and unavoidable (see Final SEIR Volume 2, pp. 4.7-32-4.7-35).</p>
<p>Impact NOISE-2: Groundborne Vibration Impacts Caused by Construction Activities. Implementation of the proposed Project would result in the exposure of sensitive receptors to groundborne vibration levels that exceed</p>	<p>Mitigation Measure NOISE-1: Short-Term Groundborne Vibration Levels Caused by Project Activities near Sensitive Receptors. (Groundwater FEIR Measure with Revisions)</p> <ul style="list-style-type: none"> New wells shall be constructed a minimum of 45 feet from vibration-sensitive receptors, as feasible. Constructing new wells within 30 feet of vibration-sensitive land uses located in 	Less than Significant	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into the Project that avoid this potentially significant environmental effect as identified in the Final SEIR.</p> <p>Facts in Support of Finding: Mitigation Measure NOISE-1 would ensure construction of new wells would be built at</p>

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the applicable standards of the San Bernardino County Development Code (83.01.090) and the Mohave County Zoning Ordinance. These groundborne vibration levels could result in annoyance or architectural/structural damage.	<p>California and 275 feet of vibration-sensitive land uses located in Arizona shall be avoided.</p> <p>A disturbance coordinator shall be designated by PG&E, which will post contact information in conspicuous locations near Project activity areas such as on construction fencing or trailers, but with consideration to culturally sensitive areas such as the Topock Maze. Signage will be clearly visible to nearby vibration-sensitive receptors as identified in Figure 4.7-1. The coordinator will manage complaints resulting from the construction vibration. Reoccurring disturbances will be evaluated by a qualified acoustical consultant retained by the project applicant to ensure compliance with applicable standards. The disturbance coordinator will contact nearby vibration-sensitive receptors, advising them of the construction schedule. This shall be achieved in part through annual project update mailings (could be combined with other annual project mailings) to owners/occupants of potentially impacted sensitive land uses to give notice of possible disturbances and impacts. The mailing shall also identify the disturbance coordinator's contact information.</p>		sufficient distances from vibration-sensitive land uses and receptors to prevent property damage and annoyances. The impact would be less than significant (Final SEIR, Volume 2, pp. 4.7-37.)
<p>Impact NOISE-3: Project-Generated Construction-Related Noise Levels. Implementation of the proposed Project would result in intermittent construction activities associated with the installation of new wells, roadways, water conveyance, utilities, water filtration facilities, and structures. These construction activities could potentially expose sensitive receptors to noise levels in excess of the applicable noise standards and/or result in a substantial increase in ambient noise levels.</p>	Implementation of Mitigation Measure NOISE-2.	Significant and Unavoidable	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that substantially lessens noise impacts, but not to a less than significant level. Noise impacts from borehole activity would cause a significant noise impact under the San Bernardino County and Mohave County standards. Additionally, the Future Activity Allowance would involve construction of new wells, pipeline segments, and access roads during the construction and operation and maintenance phases of the Project at locations that are presently not known. Activities associated with the Future Activity Allowance during construction and operation and maintenance would have a significant impact. Since no feasible mitigation measures or alternatives are available to reduce these impacts to a less than significant level, the impact remains significant and unavoidable despite the adoption of all feasible mitigation measures.</p> <p>DTSC further finds that complete avoidance of direct and indirect noise effects of the Project to sensitive receptors is not feasible. This is because complete avoidance would prevent DTSC from realizing the fundamental Project objective to implement an active remediation system to clean up the contaminated groundwater plume.</p> <p>Facts in Support of Finding: DTSC has determined that implementation of the Project would result in intermittent construction activities associated with the installation of new wells, roadways, water conveyance, utilities, water filtration facilities, and structures. These construction activities could potentially expose sensitive receptors to noise levels in excess of</p>

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
			<p>the applicable noise standards. As a result, this impact would be significant.</p> <p>In order to reduce this impact Mitigation Measure NOISE-2 shall be implemented. Implementation of Mitigation Measure NOISE-2 would require a disturbance coordinator to manage complaints during construction and require an acoustical consultant for reoccurring disturbances. Mitigation Measure NOISE-2 would not be able to reduce impacts to less than significant levels, and as such, impacts would be significant and unavoidable (see Final SEIR Volume 2, pp. 4.7-32-35).</p>
<p>Impact NOISE-4: Land Use Compatibility of Future Project Noise Levels with the Topock Traditional Cultural Property. Implementation of the proposed Project could result in future noise (construction, operation and maintenance, and decommissioning activities) that could result in conflicts with land use compatibility that exceed San Bernardino County standards for Places of Worship or conflict with Native American values associated with the Topock Traditional Cultural Property (TCP).</p>	Implementation of Mitigation Measures NOISE-1 and NOISE-2.	Significant and Unavoidable	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that substantially lessens noise impacts, but not to a less than significant level. Even with the implementation of the mitigation measures outlined for Impact NOISE-1 and NOISE-2, the Project has the potential to result in significant noise impacts on the Topock TCP. Since no feasible mitigation measures or alternatives are available to reduce this impact to a less than significant level, this impact remains significant and unavoidable despite the adoption of all feasible mitigation measures.</p> <p>DTSC further finds that complete avoidance of direct and indirect noise effects of the Project to the Topock TCP is not feasible. This is because complete avoidance would prevent DTSC from realizing the fundamental Project objective to implement an active remediation system to clean up the contaminated groundwater plume.</p> <p>Facts in Support of Finding: DTSC has determined that construction, operation and maintenance, and decommissioning phases of the Project could result in noise levels that could expose the Topock TCP to levels that exceed the County's standards and that would conflict with Native American values associated with this resource. As a result, this impact would be significant.</p> <p>In order to reduce this impact Mitigation Measure NOI-1 shall be implemented. Implementation of Mitigation Measures NOISE-1 and NOISE-2 would reduce potential impacts related to noise. In addition, CUL-1a-12 would ensure specifically that accommodations for Tribal ceremonies are provided for during construction activities. However, due to the heightened sensitivity and use of the area, impacts are considered significant and unavoidable after implementation of these measures (see Final SEIR Volume 2, pp. 4.7-32-37).</p>

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Utilities, Service Systems, and Energy			
Impact UTIL-1: Potential to Exceed Wastewater Treatment Requirements or Require a New Wastewater Facility. The proposed Project does, however, include two new septic tank systems that could exceed requirements or require new facilities.	Implementation of Mitigation Measure HYDRO-1 (specifically WM-9).	Less than Significant	Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that avoid this potentially significant environmental effect as identified in the Final SEIR. Facts in Support of Finding: Implementation of Mitigation Measure HYDRO-1 would reduce impacts associated with the installation of the two new septic tanks to less than significant because it would ensure septic facilities would be located away from drainage areas. (Final SEIR, Volume 2, pg. 4.8-20-22.)
Impact UTIL-2: Potential to Exceed Landfill Capacity (Decommissioning Activities). Decommissioning of the Project, including the IM-3 Facility, would generate a variety of construction debris, including concrete, metal sheeting, and pipe, which could exceed the available daily capacity of relevant landfills.	Implementation of Mitigation Measure HAZ-3 .	Less than Significant	Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that avoid this potentially significant environmental effect as identified in the Final SEIR. Facts in Support of Finding: Implementation of Mitigation Measure HAZ-3 would reduce impacts associated with decommissioning of the Project, which would generate a variety of construction debris, including concrete, metal sheeting, and pipe. These activities could exceed the available daily capacity of available landfills. Application of Mitigation Measure HAZ-3 would require preparation and implementation of a decommissioning plan, which addresses potential landfill capacity impacts that may arise in the future during final decommissioning procedures. Mitigation Measure HAZ-3 would reduce this impact to a less than significant level by ensuring debris will be sent to landfills with remaining capacity at that time (Final SEIR, Volume 2, pg. 4.8-23-25.)
Water Supply			
Impact WATER-1: Depletion of Groundwater Supplies. The Project would require the use of freshwater from water supply wells in Arizona. Localized effects on the groundwater table and the availability of groundwater supplies to other groundwater users near the freshwater water supply wells are possible.	Implementation of Mitigation Measure HYDRO-6 .	Less than Significant	Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that avoid this potentially significant environmental effect as identified in the Final SEIR. Facts in Support of Finding: The well yield and/or water quality of existing non-Project supply wells could be adversely impacted during the long-term operation and maintenance, and the impact would be potentially significant. Implementation of Mitigation Measure HYDRO-6 includes the required measurement of groundwater levels in the area around the freshwater supply wells throughout the decades-long operation and maintenance phase of the Project, and mitigation for verified adverse impacts, if any. With implementation of the Mitigation Measure HYDRO-6, the water supply of the non-Project supply

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
			wells would be maintained or restored to pre-existing conditions (both supply and water quality) and the impact would be reduced to less than significant (Final SEIR, Volume 2, pp. 4.9-15 - 4.9-16).
Cumulative			
Impact CUM-1: Cumulatively Considerable Impacts to Aesthetic Resources. Implementation of the proposed Project, in combination with other projects in the geographic scope, could cause a substantial adverse change to scenic vistas, scenic resources, and the existing visual character and quality of the site and its surroundings.	Implementation of Mitigation Measures AES-1 and AES-2.	Significant and Unavoidable	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into the Project that substantially lessen, but not to a less than significant level, the Project's cumulative impacts on aesthetic resources. Even with the implementation of Mitigation Measures AES-1 and AES-2, the Project could contribute incrementally to these impacts. Since no feasible mitigation measures or alternatives are available to reduce this impact to a less than significant level, this impact remains significant and unavoidable despite the adoption of all feasible mitigation measures. DTSC further finds that complete avoidance is not feasible. This is because complete avoidance would prevent DTSC from realizing the fundamental Project objective to implement an active remediation system to clean up the contaminated groundwater plume.</p> <p>Facts in Support of Finding: There is a potential that the construction phase of the Project could overlap with the Soil Investigation Activities. When added to the cumulative scenario described in the Final SEIR, Chapter 6, the effects of the Project would contribute incrementally to the cumulative impacts on aesthetic resources. The Project's incremental contribution to aesthetic impacts and, particularly with respect to the potential to substantially degrade the existing visual character or quality of the site and its surroundings, is considered cumulatively considerable and a significant cumulative impact.</p>
Impact CUM-2: Cumulatively Considerable Impacts to Cultural Resources. Implementation of the proposed Project, in combination with other projects in the geographic scope, could cause a substantial adverse change in the significance of the historical resource identified as the Topock Traditional Cultural Property (TCP); cause a substantial adverse change in the significance of unknown historical or unique archaeological resources; result in a substantial adverse change to a unique paleontological resource or unique geologic feature; and disturb human	Implementation of Mitigation Measures CUL-1 through CUL-4. Mitigation Measure CUL-5: Cumulative Impacts to the Topock TCP (New Measure). PG&E shall provide funding to the following Tribes (Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, and Hualapai Indian Tribe) that would facilitate actions to preserve the cultural and ecological integrity of the Topock TCP, and that would provide interpretation, and/or educational programs related to the Topock TCP. The funds shall be used for the purposes of ensuring the preservation, conservation and transmission of cultural values associated with the Topock TCP, including furthering Tribal knowledge and community awareness of the TCP's importance and meaning for each Tribe. The funds shall be used to implement interpretive facilities or programs, land preservation/conservation, educational programs (such as grant funding to further the cultural understanding, including research of the Topock area). The Project's Conditions of Approval will identify the amount	Significant and Unavoidable	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into the Project that substantially lessen, but not to a less than significant level, the Project's cumulative impacts on cultural resources. Even with the implementation of Mitigation Measures CUL-1 through CUL-5, the Project could contribute incrementally to these impacts. Since no other feasible mitigation measures or alternatives are available to reduce this impact to a less than significant level, this impact remains significant and unavoidable despite the adoption of all feasible mitigation measures. DTSC further finds that complete avoidance is not feasible. This is because complete avoidance would prevent DTSC from realizing the fundamental Project objective to implement an active remediation system to clean up the contaminated groundwater plume.</p>

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remains, including those interred outside of formal cemeteries.	of the one-time contribution to be made by PG&E, and the type of funding mechanism to be utilized as determined by DTSC. The funding mechanism shall provide for the management of individual, separate funds of equal amounts for each of the five Tribes, and shall administer the release of funds upon review and approval of proposals by Tribe(s). Proposals must meet the above-described purpose related to preservation/conservation, interpretation, and/or educational programs pertaining to the Topock TCP, and must meet pre-established minimum criteria. The funding mechanism shall also provide tracking and verification through documentation of the appropriate use of the funds. Within 6 months of Project approval, DTSC shall develop, in consultation with the Tribes, Tribal Funding Application Guidelines for distribution to the Tribes. The Tribal Funding Application Guidelines will identify the funding management organization that will manage the funds and will provide guidance on accessing the funds, including the identification of minimum criteria by which proposals will be evaluated. Within 30 days of notification by DTSC that the funding management organization has been established, PG&E shall provide documentation that the required funding contribution has been made. The funding organization shall report to DTSC upon the following three occasions: (1) receipt of a proposal by Tribe(s), (2) approval and release of funds, and (3) verification of implementation/use of funds. Funding shall be available for use within the duration of the active remedy, currently estimated to be approximately 30 years.		<p>Facts in Support of Finding: The Project's impacts to cultural resources, when considered in combination with other past, present, and future projects at a regional scale, would contribute to a cumulatively significant impact to historical resources (including the TCP), archaeological resources, and human remains. The Project Site and surrounding vicinity contain a number of important sites of cultural and/or archaeological importance that are integral to the cultural traditions of Native American Tribes located throughout the region.</p> <p>Projects that have already been implemented or may occur in the foreseeable future at or near the Project Site that could impact cultural resources are described in the Final SEIR Volume 2, Chapter 6, "Cumulative Impacts." The projects in the cumulative scenario have the potential to involve ground-disturbing activities that would directly impact significant cultural resources and paleontological resources. These projects may also result in visual, auditory, and other environmental impacts that may adversely affect the Topock TCP. For these reasons, the combined impacts on cultural resources in the geographic scope are considered cumulatively significant. When considered in combination with the impacts of other projects in the cumulative scenario, the Project's incremental contribution to impacts on cultural resources including historical resources (i.e., the Topock TCP), unique archaeological resources, and human remains would be cumulatively considerable.</p> <p>In order to reduce these impacts, Mitigation Measures CUL-1 through CUL-5 shall be implemented (see Final SEIR Volume 2, pp. 6-36 -6-37).</p> <p>Although implementation of Mitigation Measures CUL-1 through CUL-5 would reduce the significance of the impacts to the degree feasible, the only method to fully mitigate these impacts would be complete avoidance of any future Project activity. After review of comments on the Draft SEIR, DTSC added Mitigation Measure CUL-5 that provides funding for the Interested Tribes (Chemehuevi Indian Tribe, the Cocopah Indian Tribes, the Colorado River Indian Tribes, FMIT, and the Hualapai Indian Tribe) to be used to preserve and promote cultural values associated with the Topock TCP. The funds can be used to accomplish this through preservation/conservation programs, interpretational efforts, and the establishment of educational programs. While this mitigation measure contributes to reducing the significant and unavoidable cumulative impact, it does not reduce it to a less than considerable. No other feasible mitigation exists that would reduce the Project's contribution to less than considerable. The Project's contribution</p>

Significant Environmental Impact	Mitigation Measures	Level of Significance after Mitigation	Findings of Fact
			to this significant cumulative cultural impact is therefore cumulatively considerable (significant and unavoidable).
<p>Impact CUM-3: Cumulatively Considerable Impacts Related to Noise and Vibration. Implementation of the proposed Project, in combination with Soil Remediation Activities in the Project Area that are in the geographic scope, could cause a substantial adverse increase related to short-term construction-related noise and vibration, as well as compatibility with noise levels at the Topock TCP.</p>	<p>Mitigation Measure NOISE-3: Cumulative Noise Increases from Remedial Activities (New Measure). Coordination between teams implementing soil remedial activities (including investigation, pilot testing, and remediation) and groundwater remediation shall occur as to avoid cumulative noise levels to exceed ambient noise levels by 5 dBA or greater, or to exceed applicable County standards at any sensitive receptor (as defined in Chapter 4.7 of this SEIR). If concurrent activities must occur near common sensitive receptors, real time noise measurements of activities shall be conducted by a qualified acoustical consultant (or contractor trained by an appropriate qualified acoustical consultant) at the nearest noise-sensitive land use with a sound level meter that meets the standards of the American National Standards Institute (ANSI Section S14 1979, Type 1 of Type 2). If exceedances are not observed, monitoring can be discontinued. If exceedances are experienced, temporary barriers shall be erected as close to the construction activities as feasible, breaking the line of sight between the source and receptor where noise levels exceed applicable standards. If noise cannot be effectively mitigated, one or more of the concurrent activities shall be modified (options include but are not limited to using lower-noise-producing equipment or manual methods, relocating activities further away from each other, or avoiding/rescheduling concurrent activity, etc.) so as to result in appropriate noise levels.</p>	Significant and Unavoidable	<p>Finding: DTSC finds that changes or alterations have been required in, or incorporated into, the Project that substantially lessen the Project's cumulative impact to sensitive noise receptors. Even with the implementation of the Mitigation Measure NOISE-3, the proposed Project could to contribute incrementally to significant noise impacts in the Project Area. Therefore, the proposed Project's cumulative noise impacts in the Project Area are considered significant and unavoidable despite the adoption of all feasible mitigation measures.</p> <p>DTSC further finds that complete avoidance of cumulative noise effects of the Project to the Project Area is not feasible. This is because complete avoidance would prevent DTSC from realizing the fundamental Project objective to implement an active remediation system to clean up the contaminated groundwater plume.</p> <p>Facts in Support of Finding: Noise generated from the proposed Project could be compounded when taken in context with most other noise-generating projects in the geographic and temporal scope. While activities of other projects in the Project area are only expected to overlap with the Project for a short period of time, the Project's incremental contribution to noise impacts could be cumulatively considerable and therefore significant considering the projects in the cumulative scenario described in the Final SEIR, Chapter 6.</p> <p>Mitigation Measure NOISE-3 has been identified to reduce construction-related noise and vibration impacts associated with the Final Groundwater Remedy Project. This mitigation measure will ensure coordination between teams implementing soil remediation activities which will avoid cumulative noise impacts. This measure would reduce the Project's contribution to significant cumulative noise and vibration impacts; however, impacts would remain significant even after mitigation.</p>

Exhibit 2 to the Statement of Decision and Resolution of Approval

Mitigation Monitoring and Reporting Program

TOPOCK COMPRESSOR STATION FINAL GROUNDWATER REMEDIATION PROJECT

Mitigation Monitoring and Reporting Program

The California Department of Toxic Substances Control (DTSC) has prepared a subsequent environmental impact report (SEIR) in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15000 et seq.). The SEIR evaluates the reasonably foreseeable and potentially significant adverse environmental impacts associated with the Pacific Gas and Electric (PG&E) Topock Compressor Station (Station) Final Groundwater Remediation Project (Project). The Project involves consideration and potential approval by DTSC of the Final Groundwater Remedy for the treatment of contaminated groundwater at the Station. (Public Resources Code, Section 21166; CEQA Guidelines, Section 15162.)

This SEIR is tiered off a prior EIR, the Topock Compressor Station Groundwater Remediation Project Final Environmental Impact Report (Groundwater FEIR), which provided a programmatic and, in certain instances, a project-level analysis for the conceptual technical methods selected for the final remedy that would remediate contaminated groundwater in and around the Station. After certifying the Groundwater FEIR in January 2011, DTSC adopted the preferred remedy, identified as Alternative E—In Situ Treatment with Freshwater Flushing, and adopted findings, a statement of overriding considerations, and a Mitigation Monitoring Reporting Program (MMRP, herein referred to as the 2011 MMRP). The proposed Project would implement the chosen 2011 remedy through the Final Groundwater Remedy.

Mitigation measures that were approved by DTSC in the 2011 MMRP were related to the design, construction, operation, and decommissioning phases of the remedy. Through the development of this Final SEIR, many of the 2011 MMRP measures have been revised to reflect current conditions, changes to the Project, or otherwise new information. Some of the 2011 EIR mitigation measures have been fulfilled. Consequently, the mitigation measures presented in this MMRP reflect those revisions that have been made through the CEQA process.

Appendix GWMM to the Final SEIR includes the detailed strikeout/underline changes that have been made to the mitigation measures since 2011. Additionally, implementation of some of the mitigation measures in the 2011 MMRP had been undertaken in the years since its adoption, during the multiyear development of the Final Remedy Design which was completed in November 2015. PG&E has provided quarterly mitigation monitoring compliance reports documenting progress in compliance with the 2011 MMRP through the design process beginning in the first quarter of 2013. All mitigation monitoring compliance reports are on file at DTSC's Cypress Office. The 2011 MMRP measures that have been completed as of December 2017 have been indicated as such in this MMRP. These are primarily related to the preparation of various planning and resource studies that are now part of the Final Remedy Design.

CEQA requires a public agency to adopt a reporting or monitoring program at the time of project approval to ensure that all adopted mitigation measures are properly implemented (Public Resources Code, Section 21081.6; CEQA Guidelines, Section 15097). As a result, DTSC will adopt this updated MMRP for the Final SEIR if it also approves the Project. Accordingly, this MMRP resulting from the Final SEIR for the Final Groundwater Remediation Project supersedes and incorporates where appropriate the relevant measures from the 2011 MMRP. It is intended that this MMRP will serve as the enforcement document for all activities associated with the Final Groundwater Remediation Project to be undertaken by PG&E and its contractors, as overseen by DTSC moving forward.

The MMRP is presented in tabular format (Table 1). The table columns contain the following information:

Mitigation Number: Lists the mitigation measures by number, as designated in the Final SEIR, and by environmental resource issue area.

Mitigation Measure: Provides the text of the mitigation measures (by environmental resource issue area), as provided in the Final SEIR, each of which has been adopted and incorporated into the Project. Each mitigation measure indicates in its title whether it is a new mitigation measure since the 2011 Groundwater FEIR or a new mitigation measure that has been required by this Final SEIR. Those measures that have been completed since 2011 are indicated as such.

Timing/Schedule: Lists the trigger and/or time frame in which the mitigation is expected to take place.

Implementation Responsibility: Identifies the entity responsible for implementation of the mitigation measure, subject to DTSC oversight.

Completion of Implementation: DTSC is ultimately responsible for ensuring these mitigation measures are implemented. The “Action” column is to be used by DTSC to describe the action(s) taken to complete implementation. The “Date Completed” column is to be used to indicate when implementation of the mitigation measure has been completed. The DTSC, at their discretion, may delegate implementation responsibility or portions thereof to qualified consultants or contractors. However, DTSC still maintains overall responsibility for implementation of mitigation adopted or incorporated into the Project.

TABLE 1
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE TOPOCK COMPRESSOR STATION FINAL GROUNDWATER REMEDY PROJECT

Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
AES-1	<p>Substantial Adverse Effects on Scenic Vistas (Groundwater FEIR Measure with Revisions).</p> <p>The proposed Project, including the Future Activity Allowance, shall be designed and implemented to adhere to the design criteria presented below:</p> <ol style="list-style-type: none"> Existing mature plant specimens (i.e., medium- to large-sized trees, large or prominent shrubs, and tall predominately herbaceous) shall be protected in place during construction, operation, and decommissioning phases consistent with CUL-1a-5. The identification of plant specimens that are determined to be mature and retained shall occur as part of the design phase and mapped/identified by a qualified plant ecologist or biologist and integrated into the final design and project implementation consistent with CUL-1a-5. Revegetation of disturbed areas within the riparian vegetation along the Colorado River shall occur concurrently with construction operations. Plans and specifications for revegetation shall be developed by a qualified plant ecologist or biologist before any riparian vegetation is disturbed and shall be implemented consistent with CUL-1a-5. The revegetation plan shall include specification of maintenance and monitoring requirements, which shall be implemented for a period of 5 years after project construction or after the vegetation has successfully established, as determined by a qualified plant ecologist or biologist. Plant material shall be consistent with surrounding native vegetation. The color of the wells, pipelines, reagent storage tanks, control structures, and utilities shall consist of muted, earth-tone colors that are consistent with the surrounding natural color palette. Matte finishes shall be used to prevent reflectivity. Integral color concrete should be used in place of standard gray concrete. The final revegetation plans and specifications shall be reviewed and approved by an architect, landscape architect, or allied design professional licensed in the State of California to ensure that the aesthetic mitigation design objectives and criteria are being met. Planting associated with biological mitigation may contribute to, but may not fully satisfy, visual mitigation. The requirements of the <i>Aesthetics and Visual Resources Protection and Revegetation Plan</i> (C/RAWP Appendix N) shall be implemented throughout the construction, operation and maintenance, and decommissioning phases of the Project, including but not limited to replacement planting procedures (see Section 4.3), maintenance and adaptive management (see Section 5.2), and photo-monitoring (see Section 5.3). These measures apply to new Project components added as part of the Future Activity Allowance, should 	<p>During project construction and operation and maintenance. Maintenance and monitoring plan will be implemented for 5 years after construction or until vegetation has successfully established, as determined by a qualified plant ecologist or biologist</p>	<p>PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.</p>		

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
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	they be visible from Key View 5 or any of the other key views identified in the SEIR.				
AES-2	<p>Substantial Damage to Scenic Resources Within a Scenic Corridor (Groundwater FEIR Measure with Revisions).</p> <p>The proposed Project shall be implemented to adhere to the design criteria presented below and the Future Activity Allowance, if needed, shall be designed and implemented to adhere to the design criteria below and the Future Activity Allowance, if needed, shall be designed and implemented to adhere to the design criteria below:</p> <p>a. A minimum setback requirement of 20 feet from the water (ordinary high water mark or OHWM) shall be enforced, except with regard to any required river intake facilities, to prevent substantial vegetation removal along the river bank.</p> <p>b. Existing mature plant specimens (i.e. medium- to large-sized trees, large or prominent shrubs, and tall predominately herbaceous plants) shall be protected in place during construction, operation, and decommissioning phases. The identification of plant specimens that are determined to be mature and retained shall occur as part of the design phase and mapped/identified by a qualified plant ecologist or biologist and integrated into the final design and project implementation consistent with CUL1a-5.</p> <p>c. Revegetation of disturbed areas within the riparian vegetation along the Colorado River shall occur concurrently with construction operations. Plans and specifications for revegetation shall be developed by a qualified plant ecologist or biologist before any riparian vegetation is disturbed. The revegetation plan shall include specification of maintenance and monitoring requirements, which shall be implemented for a period of 5 years after project construction or after the vegetation has successfully established, as determined by a qualified plant ecologist or biologist.</p> <p>d. Plant material shall be consistent with surrounding native vegetation.</p> <p>e. The color of the wells, pipelines, reagent storage tanks, control structures, and utilities shall consist of muted, earth-tone colors that are consistent with the surrounding natural color palette. Matte finishes shall be used to prevent reflectivity. Integral color concrete should be used in place of standard gray concrete.</p> <p>f. The final revegetation plans and specifications shall be reviewed and approved by an architect, landscape architect, or allied design professional licensed in the State of California to ensure that the aesthetic mitigation design objectives and criteria are being met. Planting associated with biological mitigation may contribute to, but may not fully satisfy, visual mitigation.</p>	<p>During project construction and operation and maintenance. Maintenance and monitoring plan will be implemented for 5 years after construction or until vegetation has successfully established, as determined by a qualified plant ecologist or biologist</p>	<p>PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.</p>		

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	g. The requirements of the <i>Aesthetics and Visual Resources Protection and Revegetation Plan</i> (C/RAWP Appendix N) shall be implemented throughout the construction, operation and maintenance, and decommissioning phases of the Project, including but not limited to replacement planting procedures (see Section 4.3), maintenance and adaptive management (see Section 5.2), and photo-monitoring (see Section 5.3). These measures apply to new Project components added as part of the Future Activity Allowance, should they be visible from Key View 11 or any of the other key views identified in the SEIR.				
AIR-1	<p>Short Term-Construction Related Emissions of Criteria Air Pollutants (Groundwater FEIR Measure).</p> <p>PG&E shall implement the fugitive dust control measures below for any construction and/or demolition activities:</p> <ul style="list-style-type: none"> • Use periodic watering for short-term stabilization of disturbed surface area to minimize visible fugitive dust emissions during dust episodes. Use of a water truck to maintain moist disturbed surfaces and actively spread water during visible dusting episodes shall be considered sufficient; • Cover loaded haul vehicles while operating on publicly maintained paved surfaces; • Stabilize (using soil binders or establish vegetative cover) graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than 30 days, except when such delay is caused by precipitation that dampens the disturbed surface sufficiently to eliminate visible fugitive dust emissions; • Cleanup project-related track out or spills on publicly maintained paved surfaces within twenty-four hours; and • Curtail nonessential earth-moving activity under high wind conditions (greater than 25 miles per hour) or develop a plan to control dust during high wind conditions. For purposes of this rule, a reduction in earth-moving activity when visible dusting occurs from moist and dry surfaces due to wind erosion shall be considered sufficient to maintain compliance. 	During all construction, operation and maintenance, and demolition activities	PG&E shall be responsible for the implementation of these measures. DTSC shall be responsible for ensuring compliance.		
AIR-1a	<p>Short-Term Construction-Related Emissions of Criteria Air Pollutants and Precursors (New Measure).</p> <p>PG&E's construction contractor shall ensure that all off-road equipment with a horsepower greater than 50 horsepower have USEPA certified Tier 4 interim engines or engines that are certified to meet or exceed the NO_x emission ratings for USEPA Tier 4 engines. This measure excludes specialty construction</p>	At a minimum during Phase 1 and Phase 2 construction activities and during Decommissioning of IM-3 Facility when the	PG&E shall be responsible for the implementation of these measures. DTSC shall be responsible for ensuring compliance.		

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
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	equipment where Tier 4 interim engines cannot currently be obtained within the industry, or older equipment cannot be retrofitted to meet Tier 4 emissions standards. During construction and decommissioning, the construction contractor shall maintain a list of all operating equipment in use on the Project site. The construction equipment list shall state the makes, models, and numbers of construction equipment on-site. For specialty equipment where Tier 4 interim engines are not available, documentation supporting this conclusion shall be included in the equipment files. Once Tier 4 equipment is available for a piece of specialty equipment, it shall be incorporated into the construction fleet, replacing the existing non-Tier 4 piece of equipment. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to five minutes or less in compliance with California Air Resources Board's Rule 2449	decommissioning phase overlaps with Phase 2 construction			
BIO-1	Potential Fill of Wetlands and Other Waters of the United States and Disturbance or Removal of Riparian Habitat (Measure Completed – no longer applicable).	<i>Measure completed during design development</i>	<i>PG&E completed, DTSC ensured compliance</i>	<i>Preparation of CH2M Hill 2013, PG&E 2014a</i>	<i>2013, 2014</i>
BIO-1a	<p>No-net-loss of Jurisdictional Wetlands/Waters Function or Value (New Measure).</p> <p>Unavoidable direct impacts to jurisdictional areas shall be documented by a wetland specialists or Field Contact Representative (FCR) during implementation of the proposed Project. To document unavoidable direct impacts, the extent of work areas near jurisdictional areas shall be delineated in the field using GPS technology and pre- and post-impact conditions of jurisdictional areas documented with photographs. The nature of construction within work areas shall also be described, including the Project facilities installed, equipment utilized, and duration of construction activities. Documentation of unavoidable impacts shall be submitted to CDFW and DTSC to ensure adequate mitigation is provided consistent with the requirements below.</p> <p>Unavoidable direct impacts to non-disturbed jurisdictional ephemeral waters (estimated at up to approximately 1.61 acres including direct impacts resulting from planned facilities and additional facilities constructed under the Future Activity Allowance) shall be mitigated to ensure no-net-loss of function or value. Mitigation shall include both (a) and (b) detailed below. Mitigation for ground disturbance associated with restoration and enhancement activities shall not be required.</p> <p>a) In-place restoration of jurisdictional areas directly impacted by construction at a 1:1 ratio (i.e., 1 acre of restoration for each acre of</p>	Implementation of habitat restoration plans shall occur during construction and operation and maintenance. Compensation for unavoidable impacts shall occur prior to unavoidable impacts occurring	PG&E shall be responsible for the implementation of these measures. DTSC shall be responsible for ensuring compliance.		

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
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	<p>direct impact to non-disturbed jurisdictional area) shall occur in accordance with the <i>Havasu National Wildlife Refuge Habitat Restoration Plan</i> (Appendix G to the C/RAWP (CH2M Hill 2015b)) and <i>Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats</i> (Appendix O to the C/RAWP (CH2M Hill 2015b)). In-place restoration of areas directly impacted during construction will occur in two phases. The first phase will involve restoration within the areas directly impacted by construction where it will not interfere with continued operation and maintenance of the proposed Project (e.g., restoration of temporary construction work areas). The first phase of restoration shall begin within 1 year of completing construction. The second phase will involve restoration of areas that will be occupied by Project facilities to occur following decommissioning of the proposed Project. Restoration of jurisdictional areas following decommissioning of the proposed Project will be guided by a Final Habitat Restoration Plan (refer to Mitigation Measure BIO-1b).</p> <p>b) To address temporal loss of jurisdictional areas directly impacted by construction, PG&E shall provide compensatory mitigation at a minimum 2:1 ratio (2 acres of compensation for each acre of direct impacts to non-disturbed jurisdictional area). Compensatory mitigation to address temporal loss shall be agreed upon with CDFW prior to the start of construction, involve the same amount and quality of jurisdictional area(s) disturbed, and include one or more of the following approaches: 1) acquisition and preservation in perpetuity; 2) restoration; and/or 3) enhancement. Acquisition and preservation may include establishment of a conservation easement or purchase of credits from a CDFW- and/or USACE -approved mitigation banking program, or compliance with an applicable CDFW and/or USACE-approved in-lieu fee program. Restoration may include conversion of non-wetland habitat to functioning wetland habitat. Enhancement may include removal of non-native species in existing wetland habitat. As summarized in the technical memorandum, <i>Assessment of Proposed Mitigation Planting Areas for Final Groundwater Remedy Impacts</i>, included as Appendix V to the C/RAWP (CH2M Hill 2015b), PG&E has identified restoration areas within the historical floodplain of the Colorado River. The historical floodplain no longer functions as a riparian habitat with hydrologic connectivity to the river; therefore, restoration in the historical floodplain may qualify as compensatory mitigation to address temporal loss if hydrologic function can be restored. PG&E shall prepare a mitigation plan prior to the start of construction to specify methodology, criteria for meeting the 2:1 mitigation requirement, and monitoring and reporting for compensatory mitigation. The plan shall be subject to CDFW approval and in conformance with the identified performance standards, and submitted</p>				

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	<p>to DTSC, BLM, BOR, USFWS, DOI, Interested Tribes, and other appropriate landowners for review and comment within 60 days prior to finalization, as appropriate based on location of impacts.</p> <p>Restoration of jurisdictional areas within the Project Area shall be guided by the <i>Havasas National Wildlife Refuge Habitat Restoration Plan</i> (Appendix G to the C/RAWP (CH2M Hill 2015b)) and <i>Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats</i> (Appendix O to the C/RAWP (CH2M Hill 2015b)), as approved by CDFW, USFWS, and DOI. Implementation of these plans will be informed by the technical memorandum, <i>Assessment of Proposed Mitigation Planting Areas for Final Groundwater Remedy Impacts</i>, included as Appendix V to the C/RAWP (CH2M Hill 2015b), which provides preliminary information on the condition within fourteen proposed mitigation planting areas.</p> <p>The habitat restoration plans also specify on-site restoration success criteria, monitoring and reporting requirements, and adaptive management guidelines for salvage and replanting of trees, shrubs, and perennial species. In accordance with the habitat restoration plans, removal of riparian trees (e.g., palo verde trees) shall be replaced at a 3:1 ratio (i.e., planting three trees in restoration areas for each tree removed during construction). The success criteria for mitigation plantings shall be a final minimum plant replacement ratio of 2.25:1 (75% overall survival rate) of mitigation plantings at the end of a minimum 5-year monitoring period. Adaptive management guidelines outline modifications to restoration approaches, as appropriate, to ensure successful establishment of native vegetation and desired density of cover of plants. As required by the plans, the following adaptive management actions shall be implemented if success criteria are not being met: weed control, irrigation modification, herbivory protection, and additional plantings. Reporting to DTSC, CDFW, and USFWS shall be completed within 90 days of completing each monitoring year.</p> <p>The habitat restoration plans also specify design and construction avoidance and minimization measures, including:</p> <ul style="list-style-type: none"> • Locating pipelines, wells, and staging and storage areas along roadways, pipeline rights-of-way, and other previously disturbed areas to avoid impacts to vegetation to the extent feasible. • Performing pre-activity surveys prior to ground disturbance to identify and demark with flagging, fencing, and/or signage areas of native vegetation and sensitive habitats in the immediate vicinity of the construction areas. • Providing construction workers with environmental awareness training regarding biological resources including sensitive species and habitats. 				

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				Action	Date Completed
BIO-1b	<p>Final Remedy Restoration Plan (New Measure).</p> <p>A Final Remedy Restoration Plan shall be developed and implemented following decommissioning of the proposed Project. The Final Remedy Restoration Plan will address restoration of areas that were impacted during construction, operation and maintenance, and decommissioning of the proposed Project, specifying salvage/replanting measures, as well as success criteria, monitoring, and adaptive management requirements for restored areas. Success criteria for restoration areas will be similar to that identified in the existing habitat restoration plans (i.e., 75% overall survival rate of mitigation plantings at the end of a minimum 5-year monitoring period). Adaptive management actions to ensure successful establishment of native vegetation and desired density of cover of plants will include weed control, irrigation modification, herbivory protection, and additional plantings. The plan shall be submitted to DTSC, CDFW, BLM, BOR, USFWS, DOI, and other appropriate landowners for review. The Final Remedy Restoration Plan shall also be provided to Interested Tribes for review and comment, consistent with Mitigation Measure CUL-1a-16.</p>	Following decommissioning	PG&E shall be responsible for the implementation of these measures. DTSC shall be responsible for ensuring compliance.		
BIO-2a	<p>Disturbance of Special-Status Birds and Loss of Habitat (Groundwater FEIR Measure with Revisions).</p> <p>The proposed Project has been designed to minimize removal of habitat for special-status birds. Impact avoidance and minimization measures required by the BIAMP shall be implemented (refer to Appendix S of the C/RAWP (CH2M Hill 2015b)). Avoidance and minimization measures required by the BIAMP include prohibiting construction near or in special-status bird habitat; limiting construction during the breeding seasons; requiring an on-site biological monitoring during field activities; implementing buffers around active nests to the extent practical and feasible to limit noise and visual disturbances; and conducting worker awareness training and monitoring to assess the activity effect, ambient activities, site conditions, and bird behavior to determine the efficacy of nest avoidance buffers.</p>	Before and during ground-disturbing construction, operation and maintenance activities, and prior to the start of decommissioning	PG&E shall be responsible for the implementation of these measures. DTSC shall be responsible for ensuring compliance.		
BIO-2b	<p>Disturbance of Desert Tortoise and Loss of Habitat (Groundwater FEIR Measure with Revisions).</p> <p>To the extent feasible, project construction (including planned facilities and those potentially constructed as part of the Future Activity Allowance) shall be designed to minimize removal of habitat for the desert tortoise. Before any ground-disturbing project activities begin, a qualified desert tortoise biologist shall identify potential desert tortoise habitat in areas that could be affected. Through coordination with the designated qualified biologist, PG&E shall ensure that the footprints of Project elements and construction zones, staging areas, and access routes are designed to avoid direct or indirect effects on potential desert tortoise habitat to the extent feasible. Through coordination with the designated qualified biologist, PG&E shall ensure that the footprints of Project facilities and construction zones, staging areas, and access routes are designed</p>	Before and during ground-disturbing activities, operation and maintenance activities, and prior to the start of decommissioning	PG&E shall be responsible for the implementation of these measures. DTSC shall be responsible for ensuring compliance.		

TABLE 1
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE TOPOCK COMPRESSOR STATION FINAL GROUNDWATER REMEDY PROJECT

Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
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	<p>to avoid direct or indirect effects on potential desert tortoise habitat to the extent feasible. In areas where impacts to potential desert tortoise habitat are unavoidable, measures outlined in the PBA and in the USFWS letter concurring with the PBA, shall be implemented, as described below.</p> <p>A qualified desert tortoise biologist shall conduct pre-activity desert tortoise clearance surveys immediately prior to activities that would result in unavoidable impacts to tortoise habitat. The pre-activity survey will occur immediately prior to ground-disturbance. If feasible, the preconstruction desert tortoise surveys would coincide with one of the two peak periods of desert tortoise activity (i.e., if feasible, the surveys should be conducted in either the period from April through May, or from September through October). Otherwise, pre-activity clearance surveys shall be in full accordance with the substantive requirements of USFWS protocols. Any desert tortoise burrows and pallets outside of, but near, work areas shall be flagged so that they may be avoided during work activities. At conclusion of work activities, all flagging shall be removed. Should any live tortoises be found during the clearance survey, or if a tortoise moves into the work area, all work shall stop immediately and the animal shall be left to move out of the work area on its own accord. To the extent feasible, tortoises shall not be handled. PG&E will have a USFWS-approved desert tortoise handler available if and when a tortoise requires active relocation. USFWS shall be contacted prior to handling any live tortoises. All encounters of desert live desert tortoises shall be reported to USFWS, BLM, CDFW, and DTSC. Information to be reported will include for each individual: the location (narrative, vegetation type, and maps) and date of observation; general conditions and health; any apparent injuries and state of healing; and diagnostic markings.</p> <p>PG&E shall designate a field contact representative (FCR) who will be responsible for overseeing compliance with proper execution of the mitigation measures. The FCR will be on-site during implementation of all ground disturbing activities. The FCR shall be trained by the qualified desert tortoise biologist and have authority to halt activities that are in violation of the mitigation measures/or pose a danger to listed species. The FCR will have a copy of the mitigation measures and may be a project manager, PG&E representative, or qualified biologist. All employees and contractors shall be required to attend a worker awareness training prior to working on the proposed Project. The FCR shall maintain record of all employees and contractors who have completed the worker awareness training.</p> <p>USFWS may identify additional conservation measures should Project plans change, or if new information regarding the distribution or abundance of desert tortoise becomes available. PG&E shall implement any additional conservation measures identified by USFWS through the Section 7 consultation process.</p>				

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
BIO-2c	<p>Disturbance of Special-Status Species and Loss of Habitat Caused by Decommissioning (Groundwater FEIR Measure with Revisions).</p> <p>To avoid impacts on special-status species that may occur within the project area as a result of decommissioning activities, an Avoidance and Minimization Plan shall be developed and implemented through consultation with CDFW, BLM, and USFWS. The Avoidance and Minimization Plan will specify species-specific measures, including seasonal restrictions for decommissioning activities (i.e., avoidance of the avian breeding season and maternity roosting season for bats where habitat exists) as needed, as well as avoidance buffers around known locations of special-status species or their habitats. Avoidance and minimization measures identified in the plan shall be based on surveys conducted prior to decommissioning, and during the breeding season (as previously defined in the Groundwater FEIR for each species or suite of species). To the extent appropriate, the Avoidance and Minimization Plan for decommissioning activities will include applicable measures identified in the existing BIAMP and PBA. Restoration of any disturbed areas shall include measures to achieve no net loss of habitat functions and values existing before project implementation. These measures shall be achieved by developing and implementing a Final Remedy Restoration Plan (refer to Mitigation Measure BIO-1b). The plan shall include a revegetation seed mix or plantings design, a site grading concept plan, success criteria for restoration, a monitoring plan for achieving no net loss of habitat values and functions, and an adaptive management plan. Success criteria for restoration areas will be similar to that identified in the existing habitat restoration plans (i.e., 75% overall survival rate of mitigation plantings at the end of a minimum 5-year monitoring period). Adaptive management actions to ensure successful establishment of native vegetation and desired density of cover of plants will include weed control, irrigation modification, herbivory protection, and additional plantings. The Final Remedy Restoration Plan shall be submitted to DTSC, CDFW, BLM, BOR, USFWS, DOI, and other appropriate landowners for review. The Final Remedy Restoration Plan shall also be provided to Interested Tribes for review and comment, consistent with Mitigation Measure CUL-1a-16.</p>	Prior to the start of decommissioning	PG&E shall be responsible for the implementation of these measures. DTSC shall be responsible for ensuring compliance.		
BIO-2d	<p>Disturbance to Ring-Tailed Cat Individuals and Habitat (New Measure).</p> <p>The following measures shall be implemented to avoid and minimize impacts to ring-tailed cat:</p> <ol style="list-style-type: none"> i. Pre-activity surveys for ring-tailed cats shall be conducted by a qualified biologist with species-specific experience prior to the start of ground disturbing activities (including during construction, operation and maintenance, and decommissioning phases) where suitable denning habitat is present. No activities that will result in disturbance to dens or individual ring-tailed cats will proceed prior to completion of the surveys. If no active dens are found, no further action is needed. If a ring-tailed cat den is present, additional measures shall be 	Before and during ground-disturbing construction and operation and maintenance activities, and prior to the start of decommissioning	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	implemented as outlined below, and the CDFW shall be notified of any active dens within the proposed disturbance area.				
	ii. If an active ring-tailed cat den is found during pre-activity surveys, Project facilities that may result in direct impacts to the active den shall be reconfigured to avoid the loss of the den if feasible. If Project facilities cannot be modified to avoid a den, activities with the potential to disturb the den shall cease and CDFW shall be contacted immediately. If approved by CDFW, demolition of the den site shall commence only outside of the breeding season (February 1 to August 30) when the den has been confirmed to be vacated. If an occupied non-breeding den is found in an area scheduled to be impacted, prior to disturbance, the CDFW shall be notified to review and approve the proposed procedures to ensure that no take of the species occurs as a result of the action. Areas with unoccupied dens that need to be removed shall first be disturbed at dusk, just prior to removal that same evening, to allow adult ring-tailed cats to escape during the darker hours.				
BIO-2e	<p>Disturbance of Nelson's Bighorn Sheep (New Measure).</p> <p>If a Nelson's bighorn sheep is observed during ground-disturbing activities (including during construction, operation and maintenance, and decommissioning phases), work within 125 feet of individuals shall be halted (CDFW 2016). Project activities can recommence after the bighorn sheep moves more than 125 feet away on its own. If proximity of Nelson's bighorn sheep to a proposed construction area may result in construction delays, PG&E shall contact CDFW prior to proceeding with ground disturbing activities to determine an appropriate course of action.</p>	During ground-disturbing construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
BIO-2f	<p>Disturbance or Loss of Special-status Bat Species (New Measure).</p> <p>Bats occupying Roost 9 (refer to Figure 4.3-7) shall be safely excluded after the maternity season (which ends August 31) and before bats go into hibernation or torpor (which begins October 31) through the use of a one-way door. Exclusion of bats shall be performed by a biologist holding a Memorandum of Understanding from CDFW to handle bats in California or a biologist otherwise licensed by the State of California to do so. After bats are safely excluded, fast drying foam shall be used to fill the void to prevent bats from re-entering the cavity.</p> <p>To the extent possible, ground disturbance within proximity of suitable maternity roosting habitat for special-status bat species as shown in Figure 4.3-7 should occur outside the maternity season (March 15 through August 31). If activities critical to meeting the Project objectives are determined necessary during the maternity season, measures (i) through (v) below will be implemented. Measures</p>	Before and during ground-disturbing construction, operation, and maintenance activities, and prior to the start of decommissioning	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	(i) through (v) are not required for activities implemented outside the maternity season.				
	i. High- and low-frequency noise disturbance shall be minimized by establishing avoidance buffers around known roost locations. Required buffer distance will vary by roost site and noise source. Table 4.3-5 provides buffer requirements for known roosting sites and noise source. Note, vehicles and heavy equipment may travel under the railroad bridges on National Trails Highway as these vehicles are generally moving quickly and are not expected to create much frequency noise while passing under the bridges.				
	ii. To minimize potential effects to bats during nighttime activities, the Project must reduce or eliminate light levels at night. If artificial lighting at night is needed, floodlights shall be adjusted so that the angle of the beam is less than 70 degrees and directed away from roost sites. All nighttime lights shall be directed downward if possible. If lighting is required for minimum safety and security purposes, light barriers shall be used to reduce the potential for light to reach roosts. For example, if lights are needed to ensure safety of a work area, the light could be positioned so that a hillside blocks the light reaching the roosts sites. Smaller barriers, such as plywood sheeting, can be used, but lighting shall not surround a roost within the given buffer zones. Lights with high blue-white or ultraviolet content shall be avoided. When using nighttime lighting a buffer of 250 feet shall be maintained between every light source near roost sites 2 through 9, and a buffer of 400 feet shall be maintained near roost sites 1 and 10 (Table 4.3-5).				
	iii. To minimize effects of increased human activities, pedestrians shall not approach active roosts during the maternity season, and a 65-foot buffer shall be maintained between roosts and foot traffic.				
	iv. To minimize air quality degradation near roosts, stationary heavy equipment vehicles, large generators, and large idling trucks producing diesel exhaust shall not operate for more than 2 minutes within 250 feet of a bat roost (Table 4.3-5). Vehicles shall not idle their engine while under a bridge.				
	v. A biological monitor shall be on-site during ground disturbing activities within proximity of roosts to ensure avoidance and minimization measures (including avoidance buffers) are properly implemented.				

Table 4.3-5 Bat Roost Buffer Distances Per Equipment Category¹

Roost Site	Buffer Distance (feet) by Equipment Category ²					
	Construction Trucks and Heavy Equipment	Small Vehicles	Drilling, Trenching, and Light Equipment	Light Source	Pedestrian Traffic and Water Sampling Equipment	Stationary Diesel Sources > 2 minutes
1	120	90	150	400	65	250
2	90	65	150	250	65	250
3	90	65	150	250	65	250
4	90	65	150	250	65	250
5	90	65	150	250	65	250
6	90	65	150	250	65	250
7	90	65	150	250	65	250
8	90	65	150	250	65	250
9	90	65	150	250	65	250
10	90	65	150	250	65	250
Hypothetical Townsend's big-eared bat roost	400	200	200	400	200	250

¹ Roost buffers shall be implemented when ground disturbing activities are scheduled to occur during the maternity season (March 15 through August 31). Roost buffers are not needed for activities occurring outside the maternity season.

² Equipment Categories (see Appendix BOD for more detail):

Construction Trucks and Heavy Equipment/Stationary Diesel Exhaust Sources: e.g., dump trucks, 18-wheeled flatbed trucks, front-end loaders, water trucks.

Small Vehicles: e.g., pick-up trucks, UTVs.

Drilling, Trenching, and Light Equipment: e.g., excavators, backhoes, road graders, drill rigs, trenching machines.

Pedestrian Traffic and Water Sampling Equipment: e.g., hand tools, water quality instruments.

Source: H.T. Harvey & Associates 2016

Because roosting bats, including maternity colonies, switch roosts especially on a season-by-season basis, roost locations shall be identified by a qualified biologist specializing in bats at least once each for the spring and summer periods of the maternity season once every 3 years. Additionally, because western red bats could potentially breed in the large tamarisk groves located in Arizona, acoustic surveys for a minimum of three consecutive nights during fair weather (above 50 degrees Fahrenheit, no rain or high winds) during the summer maternity season shall occur once every 3 years. If western red bats are recorded acoustically, an attempt to locate active roost sites shall occur to establish appropriate buffer zones around each roost. If known roost sites do not change locations after three sets of surveys (over the course of 9 years) roosts shall be surveyed for spring and summer periods once every 5 years thereafter. Avoidance and minimization measures described (i) through (v) shall be implemented when activities are planned near newly discovered roosting locations between March 15 and August 31.

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
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BIO-2g	<p>Disturbance of Northern Mexican Gartersnake (New Measure).</p> <p>The following measures, as detailed in the USFWS Concurrence Letter (USFWS 2017), shall be implemented for activities undertaken within 600 feet of potential northern Mexican gartersnake habitat at the southern end of Topock Marsh in Arizona. These measures are additional to the general measures required by Section 3.4 of the PBA (included as Appendix U to the C/RAWP).</p> <ol style="list-style-type: none"> Workers shall exercise caution when traveling near potential gartersnake habitat along the southern margin of Topock Marsh. During the most-active season for northern Mexican gartersnakes (February 1st to November 30th), workers will not exceed 10 mph when traveling off-road to maximize the likelihood that gartersnakes would be seen and avoided by drivers. During the inactive season (December 1st to January 31st) workers will not exceed 25 mph when traveling off-road. Construction personnel will abide by the posted speed limit while traveling on the Oatman-Topock Highway. Work will stop if a gartersnake is found within the immediate area to be disturbed and the gartersnake will be allowed to leave the site on its own volition. A qualified biologist shall perform preconstruction surveys prior to ground disturbing activities with the intention of identifying potential microhabitat sites (artificial or natural cover such as debris, wood, or rock piles, wildcat dump sites, high rodent burrow densities, etc.) favorable to gartersnakes in the disturbance area to focus search effort for potential gartersnakes. When possible, ground disturbing activities should be avoided when snakes may be inactive and underground, in order to avoid injury to snakes. Construction will be completed when the northern Mexican gartersnake is active (February 1st through November 30th). Material stockpiles located near the southern margin of Topock Marsh shall be limited to designated storage areas that are more than 600 feet from potentially suitable northern Mexican gartersnake habitat or on the opposite side of the Oatman Highway. All open holes and trenches shall be inspected for trapped gartersnakes at the beginning, middle, and end of the work day, at a minimum. During excavation of trenches and to the extent possible, earthen ramps or wooden planks shall be provided to facilitate the escape of any wildlife species that may inadvertently become entrapped and to leave the site on its own volition (adapted from General Project Management Measure Number 17 of the PBA [Appendix U to the C/RAWP (CH2M Hill 2015b)]). 	During ground-disturbing construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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BIO-2h	<p>Disturbance of Special-Status Plants (New Measure).</p> <p>To reduce potential construction-related impacts to populations of mousetail suncup and other potentially occurring special-status plant species, at least one pre-construction survey shall be conducted prior to the start of any ground-disturbing activities in areas of suitable habitat. The survey shall be conducted in areas where construction is planned and during the blooming period of those species which are either known to occur or likely to occur in the area (i.e., generally March through May but dependent on rainfall patterns). The survey shall be conducted by a qualified botanist skilled at identification of the plant species in the region. The qualified botanist shall determine where pre-construction surveys are required based on existing habitat conditions. The locations of identified special-status plants shall be flagged and mapped using GPS, and a construction avoidance buffer of at least 50 feet where possible shall be established at identified locations to ensure no direct or indirect impacts occur. If the work cannot be conducted outside of the 50-foot buffer, the qualified botanist will identify construction limits and access routes that avoid impacts to known plants. PG&E shall not proceed with ground-disturbing activities that may adversely impact areas within 50 feet of special-status plants without first conferring with CDFW.</p> <p>To the maximum extent feasible, additional Project facilities to be constructed under the Potential Future Activity Allowance shall be sited to avoid suitable habitat for special-status plant species. If additional Project facilities to be constructed under the Potential Future Activity Allowance cannot be sited to avoid suitable habitat, one of the following measures shall apply.</p> <ul style="list-style-type: none"> Assume suitable habitat is occupied by special-status plant species and provide mitigation (as prescribed in (i) through (iii) below); or Verify absence or avoidance of individuals by performing focused presence/absence surveys within the suitable habitat to be impacted. Verification of presence/absence shall require data from at least 2 years of focused surveys within the previous 5 years. Focused presence/absence surveys shall be performed by a qualified botanist during the blooming period of potentially occurring species (i.e., generally March through May but dependent on rainfall patterns). If special-status plant species are observed and avoidance cannot be achieved, mitigation shall be provided (as prescribed in (i) through (iii) below). <p>Results of all surveys performed following construction of the Proposed Project shall be incorporated onto a comprehensive map of suitable habitat and known rare plant populations within the Project Area.</p> <p>As noted above, if disturbance within 50 feet of a special-status plant species cannot be avoided, PG&E shall contact CDFW to determine appropriate minimization and mitigation measures. Such measures may include, but may not</p>	Before ground-disturbing construction, operation and maintenance activities, and prior to decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	<p>be limited to, the approaches listed below. PG&E shall not proceed with ground disturbing activities that may directly or indirectly impact areas within 50 feet of special-status plants without first conferring with CDFW. The appropriate means to mitigate unavoidable impacts shall be determined based on coordination with CDFW while taking into account the nature and extent of unavoidable impacts and the species' rarity and known distribution within the Project Area. Mitigation may include a combination of the approaches outlined below, or other approaches determined by CDFW to sufficiently mitigate the impact. To the extent possible, mitigation of unavoidable impacts to special-status plants may occur in conjunction with mitigation for temporal loss of jurisdictional wetlands and waters.</p> <p>i. <i>Seed Collection for Restoration:</i> Seed from individuals to be impacted would be collected prior to ground-disturbing activities. The seed would be collected following the protocols set forth by the Center for Plant Conservation and, if long-term storage is necessary, placed in a secure seed bank facility such as the Agricultural Research Service National Center for Genetic Resources Preservation in Fort Collins, Colorado. Collected seed would be applied to restoration areas within the Project Area. Restoration plans developed for the proposed Project would be revised to include success criteria for restoration of the special-status plant species to ensure successful re-establishment of the impacted species. Success criteria for impacted special-status plants would be developed through coordination with CDFW.</p> <p>ii. <i>Enhancement of Known Populations:</i> Known populations of the species to be impacted would be enhanced by undertaking actions to increase the size of the known population. Such actions may include improving the quality of occupied habitat (e.g., invasive species removal) and/or seeding to facilitate population expansion. Enhancement of known populations may occur at off-site populations that are currently conserved or within the occupied portions of the Project Area that can be conserved. An enhancement plan for impacted special-status plants would be developed through coordination with CDFW. The plan shall be approved by CDFW and submitted to DTSC, BLM, BOR, USFWS, DOI, and Interested Tribes for review and comment prior to finalization.</p> <p>iii. <i>Preservation of Occupied Habitat:</i> Habitat occupied by the species to be impacted would be permanently protected by establishing a conservation easement. PG&E would coordinate with CDFW to determine the conditions of the conservation easement, including the required acreage of occupied habitat to be conserved and requirement monitoring and management of the conserved population. The agreed upon conditions would be detailed in a mitigation plan for impacted special-status plants. The plan shall be</p>				

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	approved by CDFW and submitted to DTSC, BLM, BOR, USFWS, DOI, Interested Tribes, and other appropriate landowners for review and comment prior to finalization.				
CUL-1a-1	<p>Avoidance and Preservation in Place (Groundwater FEIR Measure with Revisions).</p> <p>During the construction, operation and maintenance, and decommissioning phases of the Project, PG&E shall carry out all Project activities, and shall require all subcontractors to implement established protocols regarding Project activities, in ways that avoid, minimize, and mitigate significant impacts to resources associated with the Topock TCP, consistent with the CEQA Guidelines and with Stipulation I.B of the PA and Section 7.1 of the CHPMP, and to the maximum extent feasible as determined by DTSC, in coordination with PG&E, Interested Tribes, and respective landowners.</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1a-2	<p>Develop Tribal Access Plan (Measured Completed – Tribal Access Plan attached as Appendix P of the C/RAWP)</p>	<i>Measure completed during design development</i>	<i>PG&E completed, DTSC ensured compliance</i>	<i>Tribal Access Plan (Appendix P of C/RAWP)</i>	<i>November 2015</i>
CUL-1a-2a	<p>Implement Tribal Access Plans (New Measure).</p> <p>During the construction, operation and maintenance, and decommissioning phases of the Project, on non-federal land, Tribal access shall be permitted in a manner consistent with Section 2.1 “Protocols for Continued Tribal Coordination” of the CIMP (as described below in Mitigation Measure CUL-1a-8q) and “Protocol to Preserve Tribal Member’s Access to, and Use of, the Project Area” as included in Appendix P of the C/RAWP, and on federal land, Tribal access will be governed by the provisions of Appendix B “Tribal Access Plan” of the CHPMP.</p> <p>Procedures required by Appendix P of the C/RAWP include protocols and timelines for requesting access to PG&E property for religious, spiritual, or other cultural purposes and notification procedures (for additional details on requirements of the CIMP see below Mitigation Measure CUL-1a-8q, Section 2.11).</p> <p>Procedures required by Appendix B of the CHPMP include allowing Interested Tribes to access federal lands without specific authorization for the purposes of collecting materials (such as plants and minerals) or for traditional or ceremonial noncommercial uses; protocols for obtaining access permission for other purposes (such as larger or overnight gatherings); privacy measures that prohibit</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
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CUL-1a-3	recording Tribal activities; and closure of some areas and roads to public access.				
	<p>Site Security (Groundwater FEIR Measures with Revisions).</p> <p>During construction, operation and maintenance, and decommissioning of the Project, PG&E shall enhance existing measures to prevent and reduce incursions from recreational and/or other outside users from affecting unique archeological and historically significant resources, including resources within the Topock TCP, by implementing Measures CUL-1a-3a, -3c, -3d, and -3e:</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
	<p>CUL-1a-3a: Professional Qualifications and Site Condition Assessment (Groundwater FEIR Measure with Revisions).</p> <p>PG&E's approved Qualified Cultural Resource Consultant shall carry out all cultural resources work associated with the Project and implement the Mitigation Monitoring and Reporting Program (MMRP). Cultural resources consulting staff shall meet, or be under the direct supervision of individuals meeting, the minimum professional qualifications standards set forth by the Secretary of the Interior (codified in 36 CFR Part 61; 48 FR 44739), as provided in Stipulation XI.A of the PA. In the event that PG&E needs to retain a new Qualified Cultural Resource Consultant, or additional cultural consultants, DTSC shall have approval authority over PG&E's selection of cultural resources consultants.</p>				
	<p>During construction, operation and maintenance, and decommissioning of the Project, the Qualified Cultural Resources Consultant shall conduct yearly site condition assessments of documented historical resources (as identified in Table 4.4-2 of this SEIR, as well as any future resources identified within the Project Area, and any additional resources that the BLM requests be included in the annual site condition assessments), including site condition assessments of the Topock TCP, to determine if substantial adverse changes have occurred relative to the condition of the historical resources during the past year. Site condition assessments may occur less frequently or may be limited in geographic scope upon approval by DTSC and in coordination with PG&E, Interested Tribes, and BLM. PG&E shall offer to retain a Tribal monitor at historic rates of compensation or Tribal representatives designated by the Tribal Council or chairperson, if so requested, to accompany the Qualified Cultural Resources Consultant during the site condition assessments. Annual site condition assessment reports in the established format shall be prepared documenting the results of the site condition assessments. PG&E shall provide reports to DTSC and the Interested Tribes for review and comment in accordance with CIMP Section 2.3 "<i>Protocols for the Review of Cultural Resource-Related Documents</i>" and Section 6.6.5 "<i>Periodic Site Monitoring</i>" of the CHPMP. Based on the results of the report, DTSC may request that PG&E initiate a meeting with agencies and</p>				

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	Interested Tribes to discuss the findings within 30 days of submittal of the reports.				
	CUL-1a-3b: Develop Site Security Plan (Measure Completed – Site Security Plan attached as Appendix Q of the C/RAWP).	<i>Measure completed during design development</i>	<i>PG&E completed, DTSC ensured compliance</i>	<i>Site Security Plan (Appendix Q of the C/RAWP)</i>	<i>November 2015</i>
	<p>CUL-1a-3c: Coordination with BLM and San Bernardino County (Groundwater FEIR Measure with Revisions).</p> <p>PG&E shall continue to coordinate with BLM and San Bernardino County to facilitate outreach to the staff at Moabi Regional Park, requesting that they communicate to visitors the parts of the Project Area that are off limits to off-road vehicle usage because of health and safety concerns, public lands management plans, or landowner requests. PG&E shall make a good faith effort to involve Interested Tribes in this outreach effort, providing Interested Tribes with the opportunity to comment on outreach materials or provide a Tribal representative the opportunity to participate in the outreach activities. As part of this outreach effort, PG&E shall work with Moabi Regional Park and offer to design, develop, and fund the installation of an informational display (e.g., bulletin board, kiosk) within Moabi Regional Park that informs visitors of the work being done in connection with the Project.</p> <p>As provided in Appendix P of the C/RAWP, PG&E shall use information gathered during previous meetings with BLM, San Bernardino Regional Parks Department, Moabi Regional Park concessionaires, and Interested Tribes to facilitate the execution of visitor outreach materials. PG&E shall develop draft visitor outreach materials; develop a draft training session for Moabi Regional Park visitor-contact employees; develop display design concepts and draft informational content; and develop a draft plan for executing other outreach ideas identified during meetings. Once initial materials and plans are drafted, PG&E shall consult with the BLM, San Bernardino Regional Parks Department, Moabi Regional Park concessionaires, and Interested Tribes and provide these stakeholders an opportunity to review and comment on any outreach plan prior to its implementation. PG&E shall initiate conversations with key stakeholders (i.e., BLM, San Bernardino County, Moabi Regional Park, and Interested Tribes) within six months of approval of the Final Remedy Design.</p> <p>In addition to Appendix P of the C/RAWP, PG&E shall complete and implement outreach materials and plans prior to the start of construction. Materials shall be reviewed by PG&E at each phase of the Project and may be updated with input from Interested Tribes and with approval by DTSC, as the Project progresses.</p>				
	CUL-1a-3d: Signage (Groundwater FEIR Measure with Revisions).				

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	<p>PG&E shall post signage to indicate those parts of the Project Area that are off limits to off-road vehicle usage due to possible health and safety concerns and to reduce potential damage to environmental resources. If agreed to by land owners and/or local, state, or federal management entities within the Project Area, PG&E shall work with the relevant land owner or land management entity to develop, design, and fund the installation of easily visible and clear signage. This may include coordination with BLM to install signage noting the designation of the area as an Area of Critical Environmental Concern owing to its biological and cultural resources, while ensuring that signs are placed in a way that does not draw unwanted attention to specific resources.</p> <p>As provided in Appendix P of the C/RAWP, PG&E shall initiate conversations with key stakeholders (i.e., BLM, San Bernardino County, Park Moabi) within six months of the final approval of the Final Remedy Design. In addition to the key stakeholders listed in Appendix P of the C/RAWP, the FMIT shall be included as a land owner in the Project Area.</p> <p>In addition to requirements set forth in Appendix P of the C/RAWP, PG&E shall include Interested Tribes as key stakeholders in the design and installation of signage, and shall install signage prior to the start of construction, if possible, dependent on cooperation and input from land owners and land management entities.</p>				
	<p>CUL-1a-3e: Site Security (New Measure).</p> <p>Site security procedures shall be implemented in a manner consistent with the Site Security Plan (C/RAWP Appendix Q). The Site Security Plan includes, but is not limited to, protocols for regular inspections of the Project Area during working and non-working hours; ensuring construction zones and protective measures are being maintained; ensuring personnel use designated travel routes and parking areas; notification and reporting of outside disturbances to the environment; worker cultural resources sensitivity training; and visitor access controls.</p>				
CUL-1a-4	<p>Technical Review Committee (Groundwater FEIR Measure with Revisions).</p> <p>PG&E shall work with representative members of the Interested Tribes to convene and retain a multidisciplinary panel of independent scientific and engineering experts as part of a Technical Review Committee (TRC). TRC may be called upon by the Interested Tribes to review Project-related documents and attend Project-related meetings. TRC efforts must be specific to that person's area of expertise and with the objective of advising interested tribal members on technical matters relating to the remedy design and its construction. The TRC shall be made up of not more than five multidisciplinary experts. The TRC shall include only persons with technical expertise limited to geology, hydrology, water quality, engineering, paleontology, toxicology, chemistry, or biology. TRC members shall be retained at rates comparable to those paid historically to tribal</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	experts by PG&E. TRC members shall be selected by majority vote amongst participants from the Interested Tribes. For the purposes of contracting, this grant may be awarded to one tribal government to manage or, alternatively, PG&E may reimburse the tribe or TRC members directly. The entirety of the monies shall be used to fund the scientific and engineering team exclusively, and shall not be used to fund other tribal government expenses or used to support legal counsel. Activities shall be reported to DTSC for review and to ensure PG&E is in compliance at least annually. Funding for the TRC shall continue until DTSC has determined that the remedy is operating properly and successfully, at which time the necessity of the TRC shall be assessed by DTSC and the provision of the TRC may be extended, reduced, or terminated. During the operation and maintenance and decommissioning phases, the necessity of the TRC shall be periodically evaluated by DTSC. This is the same committee referenced by CR-1e-8 in the Topock Soil Investigation Project EIR and MMRP.				
CUL-1a-5	<p>Avoidance of Indigenous Plants of Biological and Cultural Significance (Groundwater FEIR Measure with Revisions).</p> <p>During construction, operation and maintenance, and decommissioning of the Project, should any indigenous plants of traditional cultural significance and listed in Appendix PLA of the Groundwater FEIR be identified within the Project Area, PG&E shall avoid, protect, and encourage the natural regeneration of the identified plants. In the event that impacts to the identified plants cannot be avoided and such plants are displaced, provisions included in the <i>Plan for Culturally Significant Plants</i> (Appendix A of the CIMP) shall be implemented. This mitigation measure is not meant to replace or subsume any actions required by state or federal entities with regard to the protection of species listed as rare, threatened, or endangered. Appendix A of the CIMP requires preconstruction surveys of works areas, staging areas, and access routes to identify and demarcate culturally significant plants; protocols for transplanting culturally significant trees and plants; protocols for salvaging topsoil for re-use during site rehabilitation to encourage regrowth of desert annuals; collecting seeds for future planting; protocols for replacement planting by container grown plants/trees; and future monitoring of transplanted trees and shrubs.</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1a-6	<p>Noise (Groundwater FEIR Measure with Revisions).</p> <p>During construction, operation and maintenance, and decommissioning of the Project, all phone calls and alarms associated with remediation activities or facilities shall not be routed through PG&E's existing alarm system utilized at the Station. The notification system for remediation-related alerts and/or phone calls shall not introduce additional noise to the Project Area, to the maximum extent feasible, provided there is ongoing compliance with applicable safety regulations or standards of the Federal Energy Regulatory Commission, Occupational Safety and Health Administration, and other agencies.</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1a-7	<p>Nighttime Lighting (Groundwater FEIR Measure with Revisions).</p>	Prior to and during construction,	PG&E would be responsible for the		

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	During construction, operation and maintenance, and decommissioning of the Project, nighttime construction-related activities shall be limited to circumstances that require the continuation of work into the nighttime periods because it cannot be disrupted or suspended (including but not limited to conditions during drilling or concrete pouring) or work may require an early morning start to ensure completion within 1 day or because of heat constraints including with regard to personnel health and safety. To minimize lighting impacts, lighting shall include shrouding or shielding for portable lights, the use of the lowest allowable height and fewest feasible numbers of lights consisting of downward-facing fixtures fitted with cutoff shields to reduce light diffusion. No permanent light poles shall be installed. However, lighting would also be required to comply with the minimum county, state, and federal security and safety standards (as described in Appendix P – Cultural Resources Protocols).	operation and maintenance, and decommissioning activities	implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1a-8 (a through p)	Develop Cultural Impact Mitigation Program (CIMP) (Measure Completed – Cultural Impact Mitigation Program attached as Appendix H of the C/RAWP)	<i>Measure completed during design development</i>	<i>PG&E completed, DTSC ensured compliance</i>	<i>CIMP (Appendix H of C/RAWP)</i>	<i>November 2015</i>
CUL-1a-8q	Implement Cultural Impact Mitigation Program (New Mitigation Measure). All activities related to the Final Remedy Design, as well as implementing the Future Activity Allowance, long-term operation and maintenance, and future decommissioning activities, shall be implemented consistent with provisions of the Cultural Impact Mitigation Program (CIMP). In addition to the parties listed in Section 2.15 of the CIMP as requiring consultation regarding discoveries and review of draft documents, DTSC shall also be included in these processes. PG&E, in consultation with the Interested Tribes, may amend the CIMP if protocols or procedures require modification due to unforeseen circumstances, as deemed necessary by DTSC. The CIMP, which is based upon Groundwater FEIR measures CUL-1a-8 (a through p), is summarized below. The text below is intended to provide a brief summary of the primary impact-reducing components of the CIMP, some of which reference the federal requirements of the PA and CHPMP (the CIMP, PA, and CHPMP may be amended or revised from time to time). Where this summary text differs from the CIMP (or the PA or CHPMP) or subsequent revision, the language of the CIMP (or PA or CHPMP) shall govern. Section 2.1- Protocols for Continued Tribal Communication: This provides methods for facilitating open communication with Interested Tribes; documenting the Interested Tribes' preferences for method of open communication; and reporting Tribal outreach to DTSC. This protocol incorporates reference to Section 6.7 "Protocols for Tribal Notification and Consultation in Advance of Certain Activities" of the CHPMP, which requires the BLM to establish email and mail distribution lists for all Points of Contact (POCs) and distribution of documents in accordance with Appendix B of the PA.	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	<p>Section 2.2 - Protocols for Appropriate Treatment of Archaeological Materials: This describes how PG&E will continue to collaborate with Interested Tribes, respecting their preferences for avoidance and other treatment of archaeological discoveries; pre-construction field verifications; implementing procedures in Section IX of the PA and Section 8.1 and Appendix C of the CHPMP (i.e., cease work measures, notification protocols, inspecting and evaluating significance of discoveries, avoiding discoveries if possible and establishing protective measures, and treatment of discoveries that cannot be avoided). This section also outlines collection and curation protocols and data recovery procedures.</p> <p>Section 2.3 - Protocols for the Review of Cultural Resource-Related Documents: This describes the dissemination and review of cultural resource-related documents; outlines types of documents available for review and comment; provides a timeframe for review and comment; and provides an opportunity for Interested Tribes to present their unique perspectives on cultural significance of the area, including natural and cultural resources, Tribal beliefs, religions, customs, and current practices. This protocol incorporates reference to Section XI of the PA.</p> <p>Section 2.4 - Protocols for the Review of Project Design Documents: This documents the procedures for dissemination and Tribal review and comment on the completed groundwater remedy design documents prior to the beginning of construction. The Final Remedy Design document was completed and submitted to DTSC on November 18, 2015.</p> <p>Section 2.5 - Protocols for Restoring the Environment to Its Preconstruction Conditions Upon Decommissioning: This protocol includes a description of the general approach to restoring areas affected by the Final Remedy Design (e.g., backfill and compaction; grading and contouring; habitat restoration and revegetation; and consideration/accommodating requests for Tribal ceremonies); completion of a restoration plan within 120 days of the Department of the Interior's (DOI's) certification of the completion of the remedy; development of the restoration plan in consultation with land owners and managers; and consultation with Signatories, Interested Tribes, and Invited Signatories to the PA. (Mitigation Measure CUL-1a-17, described below, requires implementation of the restoration plan.)</p> <p>Section 2.6 - IM-3 Decommissioning Plan (Appendix B of the CIMP): The IM-3 Decommissioning Plan includes procedures for IM-3 system lay-up; procedures for decommissioning and removing the IM-3 system; waste management procedures; best management practices and mitigation measures compliance; soil confirmation sampling; a general approach for restoring areas originally affected by IM-3 operations; approvals and reporting requirements during the phases of IM-3 system closure; and a proposed work schedule.</p> <p>Section 2.7 - Protocols for Repatriation of Clean Soils During Construction: The approach and management to soil displacement was documented in</p>				

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	<p>"Revised Management Protocol for Handling and Disposition of Displaced Site Material" (Appendix B of the Soil Management Plan) and outlines the procedures and measures to minimize the amount of displaced material that leaves the Project Area and to provide for the eventual return, reuse, or restoration of the material onto the lands from which it was displaced. The management protocol was incorporated into the Soil Management Plan (Appendix L of the C/RAWP) – see Mitigation Measure CUL-1a-18 below for additional details on the procedures in the Soil Management Plan.</p> <p>Section 2.8 - Noise Protocol: This protocol includes establishing a disturbance coordinator for Project-related noise concerns; implementing engineering controls to minimize construction-related noise (e.g., install temporary noise barriers such as berms, stockpiles, dumpsters, bins, and/or engineered acoustical barriers) within identified noise buffers; selecting noise monitoring locations in coordination with Interested Tribes; maintaining all construction equipment according to manufacturer guidelines and fitting equipment with the best available noise suppression devices; shrouding or shielding impact tools; muffling or shielding exhaust ports on power equipment; limiting idling of construction equipment; procedures for addressing Project-related noise concerns; and communication/notification with Interested Tribes.</p> <p>Section 2.9 - Protocols for the Appropriate Methods, Consistent with Mitigation Measures AES-1 and AES-2, to Reduce Visual Intrusions: This protocol includes the measures listed in SEIR Mitigation Measures AES-1 and AES-2, including a minimum setback of 20 feet from the water to prevent substantial vegetation removal along the riverbank; protecting mature plants; revegetation of disturbed areas within the riparian vegetation along the Colorado River; using plant material consistent with surrounding native vegetation; construction wells, pipeline, and utilities in muted, earth-tone colors consistent with the surrounding natural color palette. The protocol also summarizes the design concepts that PG&E incorporated into the Project, including locating final aboveground facilities within existing facilities when appropriate; building designs that are harmonious with existing buildings and nearby landforms; flush-mount or below-ground installations whenever feasible; construction within existing transportation corridors; working within previously disturbed sites whenever possible; placing aboveground facilities away from traffic where feasible; and designing lighting to minimize glare. The protocol also describes the opportunities afforded to agencies, Interested Tribes, and other stakeholders to provide their input on visual aspects of the Project design, such as providing visuals in design packages and allowing reviewing parties to request additional visualizations or key views. The protocol also provides notification procedures to address temporary visual intrusions during Project implementation.</p> <p>Section 2.10 - Protocols for Tribal Notification in Advance of Project-Related Activities: Whenever possible, PG&E will notify Interested Tribes at least two weeks in advance of project-related ground-disturbing activities (such</p>				

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	<p>as grading, trenching, boring, drilling, or other excavation) whenever possible. Methods of notification may include, but are not limited to: through workplans and Project schedules; formal presentation or announcements at meetings; posting schedules online; email; telephone when advance notification was not possible; monthly schedules of field activities; weekly look-ahead schedules; and/or daily information sheets during times of intensive Project activity.</p> <p>Section 2.11 - Protocols to Accommodate Tribal Ceremonies or Activities Involving Topock Cultural Area: Key Tribal ceremonies involving the Topock Cultural Area [Topock TCP] will be accommodated if feasible as determined by DTSC. Any Tribe(s) wishing to perform such a ceremony may contact PG&E's Site Manager by telephone, email, or in writing to discuss the specific request. For the purposes of this protocol, key Tribal ceremonies will include any ceremonies or activities for which the Tribes choose to notify and/or ask for assistance. PG&E will consider the request and decide if the request can be accommodated as is, with modifications, or not at all, and will notify the requestor by phone or in person as soon as possible. PG&E staff, consultants, contractors or subcontractors will conduct themselves appropriately and, if invited to participate, will be respectful, turn off cell phones, and refrain from photography without permission. PG&E will maintain confidentiality of documents and sensitive information to the maximum extent allowed by the law. The Tribal representative will be responsible for further discussion of ceremonial activities with other identified impacted landowners, if necessary. Access to the Project area by Tribal religious practitioners for the purpose of conducting Tribal ceremonies will be consistent with Federal and state laws, regulations, and agreements governing the property within the Project area. Such access will also be consistent with the Tribal Access Plan prepared in response to 2011 Groundwater FEIR Mitigation Measure CUL-1a-2, "Protocol to Preserve Tribal Member's Access to, and Use of, the Project Area" as included in Appendix P of the C/RAWP, General Principle I.C of the BLM's PA, and Appendix B "Tribal Access Plan" of the CHPMP.</p> <p>Section 2.12 - Protocols for Tribal Monitors to Observe Ground-Disturbing Activities: PG&E will notify Interested Tribes of planned ground-disturbing activities and other scientific surveying within a minimum of one week and in the event of schedule changes. Tribal monitors will prepare and submit Daily Monitoring Logs. This protocol references Section 6.6.4 "Construction Monitoring" of the CHPMP, which requires advance notification and inviting Tribal monitors to observe ground-disturbing activities in accordance with Appendix C of the PA.</p> <p>Section 2.13 - Provision of Reasonable Compensation for Tribal Monitors: PG&E will provide reasonable compensation for Tribal monitors who work on the Project consistent with historic rates.</p> <p>Section 2.14 - Protocols for Protective Measures for Archaeological/Historical Sites During Construction: This protocol provides</p>				

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	<p>for identifying protective measures cultural sites, to the extent feasible, prior to construction; modifying construction zones to avoid discoveries identified during construction; implementing protective measures (such as covering, flagging, or fencing); if needed, modifying exclusion zones in consultation with the parties in the field; providing for archaeological and Tribal monitoring of implementation and removal of protective measures; periodic inspection of protective measures during construction; inspection, documentation, evaluation, and protection of discoveries; notification to Tribal monitors of discoveries; and restoration of areas to pre-construction conditions after removal protective measures.</p> <p>Section 2.15 - Protocols for Reporting Discoveries of Cultural Importance: This protocol outlines how PG&E will notify DTSC and BLM of discoveries of previously unidentified or suspected historic or archaeological resources (including human remains and/or associated funerary objects or graves), as well as Interested Tribes if the resource is Native American in origin; will cease work within the vicinity of the discovery until the discovery has been evaluated and treatment developed; implement protective measures, if necessary; choose avoidance as the preferred method for the treatment of cultural resources, particularly for human remains, items of cultural patrimony, or funerary objects; and document discoveries in a culturally sensitive manner, and invite Interested Tribes to assist with documentation to identify Tribal cultural values. If further studies are required for any discovery, PG&E will consult with BLM, who will consult with Interested Tribes. Documentation will be provided to BLM and Interested Tribes (for Native American resources) for review and comment and final documents will be distributed to DTSC, BLM, Interested Tribes, and PG&E, and to ASM or CHRIS as appropriate.</p> <p>Section 2.16 - Protocols for Inspecting Remediation Facilities and/or Staging Areas During Construction: The locations of remediation facilities and staging area will be examined for cultural resources throughout the construction phase. Interested Tribes will receive notice at least 2 weeks in advance whenever possible. Previously impacted land will be selected wherever feasible for re-use as staging areas and/or the siting of remediation facilities and direct physical impacts to the Topock Maze as it is manifested archaeologically will be completely avoided when siting any staging area or remediation facility. Any resources present will be avoided to the extent feasible. This protocol also provides for archaeological and Tribal monitoring of earth-disturbing activities at remediation facilities and/or staging areas during construction, and states that these monitors will at all times comply with Project-wide and job site-specific safety requirements.</p>				
CUL-1a-9	<p>Preference for Previously Disturbed Areas (Groundwater FEIR Measure with Revisions).</p> <p>During the design of areas to be used as part of the Future Activity Allowance, PG&E shall, in communication with the Interested Tribes (and subject to their review), and to the maximum extent feasible, as determined by DTSC, give: (1)</p>	Prior to and during construction, operation and maintenance, and	PG&E would be responsible for the implementation of these measures. DTSC would be responsible		

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	priority to previously disturbed areas for the placement of new physical improvements; and (2) priority to re-use of existing physical improvements, such as but not limited to wells and pipelines, but not including the IM-3 Facility. "Disturbed" areas in this context means those areas outside of documented archaeological site boundaries that have experienced ground disturbance in the last 50 years.	decommissioning activities	for ensuring compliance.		
CUL-1a-10	<p>Avoidance of Topock Maze (Groundwater FEIR Measure with Revisions).</p> <p>During construction, and operation and maintenance, and decommissioning activities, as well as activities associated with the Future Activity Allowance, PG&E shall consider the location of Loci A, B, and C of the Topock Maze during the design of Project components and is prohibited from creating any direct physical impact on the Topock Maze, as it is manifested archaeologically. The design of facilities as part of the Future Activity Allowance shall also prevent all indirect (e.g. noise, aesthetics) impacts on the Topock Maze, to the maximum extent feasible as determined by DTSC.</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1a-11	<p>Open Grant Funding (Groundwater FEIR Measure with Revisions).</p> <p>During the construction phase of the Project, PG&E shall provide an open grant for one part-time cultural resource specialist/project manager position for each of these four Interested Tribes: Chemehuevi, Cocopah, CRIT, and Hualapai. Additionally, the FMIT shall receive one full-time cultural resource specialist/project manager position in light of their ownership of land in the Project Area and historical involvement in the remediation process. The award of the grants is for the timely review of Project documents, participating in project-related meetings, coordinating and managing input and interests for the Tribe on the Project, and to act as a Tribal liaison with PG&E and regulatory agencies. The cultural resources specialist/project manager shall be compensated at rates of historic compensation with provisions for escalation of rates tied to the U.S. Department of Labor, Bureau of Labor Statistics Employment Cost Index. The payment of grant monies shall be timed to the awarded tribes' fiscal cycles so that the tribes are not forced to front funds for long periods of time. These positions shall act as cultural resources contacts and project managers for interactions between the tribes, PG&E, and DTSC to ensure coordination during construction of the remedy to avoid, reduce, or otherwise mitigate impacts on resources qualifying as historical resources under CEQA. This funding is separate from provisions for tribal monitor positions and shall not be used for routine tribal business or legal counsel. For review and approval, PG&E shall provide DTSC with the names of the selected grant recipients and a report that summarizes activities associated with the grant program, at least annually. Funding for these positions shall continue until DTSC has determined that the remedy is operating properly and successfully, at which time the necessity of the cultural resource specialist/project manager positions shall be assessed by DTSC and the positions shall be extended, reduced, or terminated. During the</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	operation and maintenance and decommissioning phases, the necessity of the positions shall be periodically evaluated by DTSC. These positions shall be inclusive of those referenced by CR-1e-9 in the Topock Soil Investigation Project EIR and MMRP and not additive.				
CUL-1a-12	<p>Tribal Ceremonies (Groundwater FEIR Measure with Revisions).</p> <p>PG&E shall provide reasonable opportunity, as determined by DTSC, for Interested Tribes to conduct a traditional healing/cleansing ceremony (or ceremonies) before and after the construction phase. Accommodations for Tribal ceremonies shall be implemented consistent with Section 2.11 "Protocols to Accommodate Tribal Ceremonies or Activities Involving Topock TCP" of the CIMP (as described above in Mitigation Measure CUL-1a-8q) and Section 7.2 "Accommodation of Tribal Activities and Ceremonies Involving the Topock Maze/TCP" (see below) and Appendix B of the CHPMP (as described above in Mitigation Measure CUL-1a-2a).</p> <p>As described in Section 7.2 of the CHPMP, the BLM will continue to work with the Interested Tribes to identify Tribal activities and ceremonies that are associated with the Topock TCP and to consult with the Interested Tribes and PG&E to develop treatment measures to accommodate them.</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1a-13	Develop Worker Education Training Program (Measure Completed – Worker Education Training Program is attached in Appendix P of the C/RAWP).	<i>Measure completed during design development</i>	<i>PG&E completed, DTSC ensured compliance</i>	<i>Worker Education Training Program (Appendix P of C/RAWP)</i>	<i>November 2015</i>
CUL-1a-13a	<p>Implement Worker Education Training (New Measure).</p> <p>During construction, operation and maintenance, and decommissioning of the Project, worker education training procedures shall be implemented consistent with the protocols identified in Appendix P of the C/RAWP. The following provides a summary of the worker education training procedures as identified in Appendix P of the C/RAWP. The worker education program will be implemented prior to commencement of any ground-disturbing activities and as personnel are added. The program includes, but is not limited to: mandatory training for PG&E employees, consultants, contractors, and subcontractors who are involved with construction or ground disturbing activities (including decommissioning and restoration); cultural sensitivity training to familiarize personnel with the sacred nature of the area; providing for participation of Interested Tribes, Tribal monitors, archaeological monitors, and Federal agency staff as appropriate; and non-tolerance of any disrespectful behavior in the field and removal of any staff, workers, or contractors who do not comply. Personnel engaged in field activities will be trained prior to conducting fieldwork and personnel engaged in design work will be trained as soon as practicable after being assigned to the Project.</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	Training will be conducted at each Field Project Orientation meeting prior to each substantial Project work phase and at additional opportunities as identified by PG&E in collaboration with the Interested Tribes. Training will include, but is not limited to discussion topics such as: the significance and sensitivity of the Topock TCP; appropriate on-site behavior; protection of significant cultural resources; worker responsibilities (avoidance of sensitive areas, staying on designated routes and work areas, etc.); and consequences of noncompliance. Presentation materials that may be developed will be shared with Interested Tribes for their input. PG&E will maintain training records that will be dated and signed by the trainee and trainer.				
CUL-1a-14	Tribal Notification of Potential Future Activities (New Measure). For any potential Future Activity Allowance that requires preparation of a work request, work plan, or technical memorandum, PG&E shall submit the subject documentation to DTSC, which will contain a description of the proposed activities, any available information regarding current conditions, and tracking information regarding how much of the Future Activity Allowance would be used by the particular activity, should it be authorized by DTSC. DTSC shall then provide the documentation to Interested Tribes (and other stakeholders) for review and comment. Timeline for review and consideration of Tribal comments shall be made by DTSC on a case-by-case basis, dependent on the known resources present on the subject location and the urgency of the Future Activity Allowance to ensure the proper and successful operation of the Remedy. Following Tribal review of the documentation, next steps could include modifications to the work plan, additional correspondence (i.e., site walk, meetings), or authorization by DTSC of the necessary Future Activity Allowance. If the Future Activity Allowance is ultimately approved by DTSC, all the applicable mitigation measures defined in this SEIR will apply.	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1a-15	Future Activity Allowance Cultural Resources Survey (New Measure). During the planning phase of any Future Activity Allowance activities, all areas that may be subject to construction or operation and maintenance activities as part of the Future Activity Allowance, plus a 50-foot buffer, and have not been surveyed in the past 5 years, shall be subject to archaeological resources survey prior to any ground disturbing activity. The survey shall be conducted by the Qualified Cultural Resources Consultant and shall document resources potentially qualifying as historical resources under CEQA (both as contributors to the Topock TCP and as individual historical resources). Tribal monitors shall be invited to participate in the survey. PG&E's Qualified Cultural Resources Consultant shall document the results of the survey in a <i>Future Activity Allowance Cultural Resources Survey Report</i> that follows the "Archaeological Resource Management Reports guidelines and Department of Parks and Recreation" guidelines. PG&E's Qualified Cultural Resources Consultant shall also prepare Department of Parks and Recreation 523 forms and file them with the South Central Coastal Information Center (for resources in California) and	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	<p>Arizona State Museum site cards shall be prepared and filed with the Arizona State Museum (for resources in Arizona). PG&E shall distribute draft reports to DTSC, BLM, and the Interested Tribes for review and comment consistent with Section 2.3 "<i>Protocols for the Review of Cultural Resources-Related Documents</i>" of the CIMP and Section 6.7 "<i>Protocols for Tribal Notification and Consultation in Advance of Certain Activities</i>" of the CHPMP (as described above in Mitigation Measure CUL-1a-8q). PG&E shall submit final reports to DTSC, BLM, and the Interested Tribes no less than 2 weeks prior to the start of ground disturbance in an area.</p> <p>In the event that resources potentially qualifying as historical resources under CEQA (either as contributors to the Topock TCP or as individual historical resources) are identified during the survey, avoidance and preservation in place shall be the preferred manner of mitigating impacts to the resources. If avoidance of the identified resources is determined by DTSC, in coordination with respective landowners, Interested Tribes, and PG&E, to be infeasible, procedures provided in Section 2.2 "<i>Protocols for the Appropriate Treatment of Archaeological Materials</i>" of the CIMP, Section 8 "<i>Discoveries</i>" and Appendix C "<i>Discovery Plan</i>" of the CHPMP (as described above in Mitigation Measure CUL-1a-8q), and Appendix D "<i>Plan of Action</i>" of the CHPMP (as described below in Mitigation Measure CUL-4) shall be implemented.</p> <p>If DTSC determines that an expedited action is necessary in order to respond to the changing site condition, pre-construction inspection protocols identified in Section 2.16, "<i>Protocols for Inspecting Remediation Facilities and or Staging Areas During Construction</i>" of the CIMP shall then be followed. This section requires tribal notification in advance of the pre-construction inspection, archaeological and tribal inspection of the area, avoidance of identified resources if possible, or treatment if necessary, and monitoring of any ground disturbance.</p> <p>In instances where Future Activity Allowance activities are proposed in the field due to an immediate need as a result of unforeseen circumstances, PG&E shall conduct the activity in consultation with an archaeological monitor and Tribal Monitor on the ground, and notify DTSC and the appropriate DOI agency of the activity within 24 hours.</p>				
CUL-1a-16	<p>Implement Restoration Plan (New Measure).</p> <p>Restoration following decommissioning of the Project shall be implemented in a manner consistent with Section 2.5 "<i>Protocols for Restoring the Environment to its Preconstruction Conditions Upon Decommissioning</i>" of the CIMP (as described above in Mitigation Measure CUL-1a-8q) and the Havasu National Wildlife Refuge Restoration Plan (C/RAWP Appendix G; see Mitigation Measure BIO-1a in this SEIR). Additionally, consistent with requirements of Section 6.3 "<i>Environmental Restoration</i>" of the CHPMP, a Remedy Decommissioning Plan will be submitted by PG&E to DOI within 120 days of DOI's certification of</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	completion of the CERCLA Remedial Action and determination by DOI that removal of such facilities is protective of human health and the environment. The Remedy Restoration Plan shall be provided to DTSC and Interested Tribes for review and comment, consistent with Mitigation Measure BIO-1b.				
CUL-1a-17	<p>Displaced Soil Procedures (New Measure).</p> <p>Procedures for the management and handling of displaced soils resulting from activities associated with construction, operation and maintenance, and decommissioning of the Project shall be treated in a manner consistent Section 2.7 “<i>Protocols for Repatriation of Clean Soils Cuttings Generated During Construction</i>” of the CIMP (as described above in Mitigation Measure CUL-1a-8q) and the Soil Management Plan (C/RAWP Appendix L). The following provides a summary of the Soil Management Plan procedures as identified in Appendix L of the C/RAWP. Where this summary text differs from the Soil Management Plan or subsequent revision, the language of the Soil Management Plan shall govern. As indicated in the Soil Management Plan, clean soil (material that is determined to have a representative concentration that is equal to or less than the interim screening level or project-specific cleanup goal) will be labeled and stored on-site in 55-gallon drums/small containers, roll-off bins, and/or stockpiles for return, re-use, and/or restoration. Soil classified as RCRA and non-RCRA hazardous waste, and non-hazardous soil that is unsuitable for final disposition on-site because contaminants are present above the interim screening level or Project-specific cleanup goal, will be labeled and stored temporarily on-site and transported off-site for disposal. Options for return, re-use, and/or restoration on-site that have been identified include: replacement of original material into original or other borings, trenches, or excavations; creation of topographical or landscape barriers to protect sensitive areas; creation of berms or other structures to prevent erosion; on-site road maintenance; and stockpiling in designated areas</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1a-18	<p>Aesthetics (New Measure).</p> <p>During construction, operation and maintenance, and decommissioning, protocols for the protection of visual resources shall be implemented in a manner consistent with Section 2.9 “<i>Protocols for the Appropriate Methods, Consistent with Measures AES-1 and AES-2 [of the Groundwater FEIR] to Reduce Visual Intrusions</i>” of the CIMP (see also Mitigation Measures AES-1 and AES-2 of this SEIR).</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1a-19	<p>Implement Treatment Plan for the Topock TCP (New Measure).</p> <p>All activities associated with construction, operation and maintenance, and decommissioning of the Final Remedy Design shall be implemented consistent with provisions of the <i>Cultural and Historical Property Treatment Plan for the Topock Compressor Station</i> (Hanes and Price <i>in progress</i>), which is being prepared pursuant to requirements of the Stipulation VII.B and Appendix B of the</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible		

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	PA and mitigation measure CUL-1b/c-3 of the Groundwater FEIR. The Treatment Plan shall address treatment to the Topock TCP and its contributors, in addition to historical resources other than the Topock TCP (this is the same Treatment Plan referenced in Section 7 “ <i>Cultural Property-Specific Treatment Measures</i> ” of the CHPMP, which can be used to satisfy the requirements of this mitigation measure). PG&E shall distribute the draft Treatment Plan and any future amendments to the Interested Tribes for tribal review consistent with Section 2.3 “ <i>Protocols for the Review of Cultural Resources-Related Documents</i> ” of the CIMP and Section 6.7 “ <i>Protocols for Tribal Notification and Consultation in Advance of Certain Activities</i> ” of the CHPMP (as described above in Mitigation Measure CUL-1a-8q). As such, the Treatment Plan is subject to revision prior to finalization. Once consultation is complete, PG&E shall submit the final Treatment Plan to DTSC for final review and approval prior to the start of construction. DTSC has included specific measures outlined in the draft Treatment Plan (March 26, 2018 version) that reduce impacts to historical resources, beyond those already outlined in the PA, CHPMP, CIMP, and Final SEIR MMRP, as conditions of approval on the Project. When the final Treatment Plan is approved, those final measures will replace and/or supplement those identified in DTSC’s conditions of approval for the Project. The Treatment Plan may be amended in the future in the event of new discoveries or greater than anticipated impacts. Treatment Plan amendments shall be required in instances where the current content of the Treatment Plan is insufficient to address necessary treatment measures and shall be determined in coordination amongst PG&E, BLM, DTSC, and Interested Tribes.		for ensuring compliance.		
CUL-1b/c-1	<p>Consider Locations of Historical Resources during Design (Groundwater FEIR Measure with revisions).</p> <p>PG&E shall consider the locations of the identified historical resources during the design of the physical improvements necessary for the proposed Project and avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible, as determined by DTSC. Future design plans for the Project, in relation to known cultural resources, shall be submitted to DTSC for review and approval.</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1b/c-2	<p>Prepare a Cultural Resources Study (Measure Completed – several cultural resources studies were completed, including “<i>Geoarchaeological Assessment for the Topock Remediation Project</i>” [Appendix T of the C/RAWP] and “<i>Results of Pre-Construction Field Verification Inspections for the Topock Compressor Station Groundwater Remedy</i>” [Moloney and Price 2014, confidential report on file at DTSC]).</p>	Measure completed during design development	PG&E completed, DTSC ensured compliance	Geoarchaeological Assessment (Appendix T of C/RAWP); Moloney and Price, 2014)	2014; November 2015

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
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CUL-1b/c-3	<p>Prepare and Implement a Treatment Plan for Historical Resources other than the Topock TCP (Groundwater FEIR Measure with Revisions).</p> <p>All activities associated with construction, operation and maintenance, and decommissioning of the Final Groundwater Remedy Project shall be implemented consistent with provisions of the <i>Cultural and Historical Property Treatment Plan for the Topock Compressor Station</i> (Hanes and Price <i>in progress</i>), which is being prepared pursuant to requirements of the Stipulation VII.B and Appendix B of the PA and mitigation measure CUL-1b/c-3 of the Groundwater FEIR. The Treatment Plan shall identify measures to lessen impacts to historical resources other than the Topock TCP that cannot be avoided by the Project and that will be subject to significant impacts (this is the same Treatment Plan - <i>Cultural and Historical Property Treatment Plan for the Topock Compressor Station</i> [Hanes and Price <i>in progress</i>] - described above in Mitigation Measure CUL-1a-19 and is currently being prepared). The Treatment Plan shall identify which criteria for listing on the NRHP/CRHR contribute to the affected resource's significance and which aspects of significance would be materially altered by construction, operation and maintenance, or decommissioning and shall provide for reasonable efforts to be made to permit the resource to be preserved in place or left in an undisturbed state consistent with the CEQA Guidelines and with Stipulation I.B of the PA and Section 7 of the CHPMP, and to the maximum extent feasible as determined by DTSC, in coordination with PG&E, Interested Tribes, and respective landowners. PG&E shall distribute the draft Treatment Plan and any future amendments to the Interested Tribes for tribal review consistent with Section 2.3 "<i>Protocols for the Review of Cultural Resources-Related Documents</i>" of the CIMP and Section 6.7 "<i>Protocols for Tribal Notification and Consultation in Advance of Certain Activities</i>" of the CHPMP (as described above in Mitigation Measure CUL-1a-8q). As such, the Treatment Plan <u>is subject to revision prior to finalization</u>. Once consultation is complete, PG&E shall submit the final Treatment Plan to DTSC for final review and approval prior to the start of construction. DTSC has included specific measures outlined in the draft Treatment Plan (March 26, 2018 version) that reduce impacts to historical resources, beyond those already outlined in the PA, CHPMP, CIMP, and Final SEIR MMRP, as conditions of approval on the Project). When the final Treatment Plan is approved, those final measures will replace and/or supplement those identified in DTSC's conditions of approval for the Project. The Treatment Plan may be amended in the future in the event of new discoveries or greater than anticipated impacts. Treatment Plan amendments shall be required in instances where the current content of the Treatment Plan is insufficient to address necessary treatment measures and shall be determined in coordination amongst PG&E, BLM, DTSC, and Interested Tribes.</p>	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1b/c-4	<p>Cultural Resources Monitoring Program and Inadvertent Discovery Measures (Groundwater FEIR Measure with Revisions).</p>	Prior to and during construction,	PG&E would be responsible for the		

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
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	<p>CUL-1b/c-4a: Cultural Resources Monitoring Program.</p> <p>All ground-disturbing activities associated with construction, operation and maintenance, and decommissioning phases of the Project, including the Potential Future Activities, shall require archaeological monitoring and PG&E shall invite Tribal monitors to participate. The Cultural Resources Monitoring Program shall be implemented in a manner consistent with Sections 2.10 “<i>Protocols for Tribal Notification in Advance of Project-Related Activities</i>” and 2.12 “<i>Protocols for Tribal Monitors to Observe Ground Disturbing Activities</i>” of the CIMP, Appendix C “<i>Topock Remediation Project Programmatic Agreement Tribal and Archaeological Monitoring Protocol</i>” of the PA, and Section 6.6.4, “<i>Construction Monitoring</i>,” of the CHPMP (as described above in Mitigation Measure CUL-1a-8q). In addition to the parties that require notification and coordination as listed in Appendix C of the PA, PG&E shall also notify DTSC.</p> <p>During construction, PG&E shall document monitoring activities in the monthly progress reports or quarterly compliance reports, meeting at a minimum those requirements described in Section 2.6.3.3 “<i>Additional Reporting During Remedy Construction</i>” and Table 2.3-1 “<i>Communication Framework During Construction and Startup</i>” of the C/RAWP, and incorporate any additional communication requirements directed by DTSC and DOI. During operation and maintenance, PG&E shall document monitoring activities in the quarterly progress reports or annual compliance reports described in Section L2.2 “<i>Summary of Communication Procedures and Protocols</i>” and Table L2.2-1 “<i>Communication Framework During Operation and Maintenance</i>.” During decommissioning, PG&E shall document monitoring activities in monthly progress reports or quarterly monitoring compliance reports consistent with those described in Section 2.6.3.3 “<i>Additional Reporting During Remedy Construction</i>” and Table 2.3-1 “<i>Communication Framework During Construction and Startup</i>” of the C/RAWP. Documentation of monitoring shall generally include dates of monitoring, monitoring participants, activities observed, and descriptions of any archaeological resources encountered (resource location information shall be kept separate and confidential). Department of Parks and Recreation 523 forms, following the Office of Historic Preservation’s <i>Instructions for Recording Historical Resources</i>, shall be prepared by the Qualified Cultural Resources Consultant and filed with the South Central Coastal Information Center (for archaeological resources in California) and Arizona State Museum site cards shall be prepared by the Qualified Cultural Resources Consultant and filed with the Arizona State Museum (for archaeological resources in Arizona) for all newly identified and updated archaeological resources, and shall be compiled and provided to DTSC as they become available. Interested Tribes shall be afforded an opportunity to provide input on archaeological discoveries site forms and updates in accordance with measures outlined in the Treatment Plan (Mitigation Measure CUL-1a-19) and BLM policies and practices pertaining to information sharing.</p>	operation and maintenance, and decommissioning activities	implementation of these measures. DTSC would be responsible for ensuring compliance.		

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
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	CUL-1b/c-4b: Inadvertent Discoveries.				
	During construction, operation and maintenance, and decommissioning phases of the Project, procedures for the treatment of inadvertent discoveries of resources potentially qualifying as historical resources under CEQA shall be implemented in a manner consistent with Section 2.2 “ <i>Protocols for the Appropriate Treatment of Archaeological Materials</i> ” of the CIMP, and Section 8 “ <i>Discoveries</i> ” and Appendix C “ <i>Discovery Plan</i> ” of the CHPMP (as described above in Mitigation Measure CUL-1a-8q), and Appendix D “ <i>Plan of Action</i> ” of the CHPMP (as described below in Mitigation Measure CUL-4). In addition to the parties listed in Section 2.15 of the CIMP as requiring consultation regarding discoveries and review of draft documents, DTSC shall also be included in these processes.				
CUL-1b/c-5	Avoidance and Preservation in Place (New Measure). During the construction, operation and maintenance, and decommissioning phases of the Project, PG&E shall carry out all Project activities, and shall require all subcontractors to implement established protocols regarding Project Activities, in ways that avoid, minimize, and mitigate significant impacts to historical resources other than the Topock TCP and unique archaeological resources consistent with the CEQA Guidelines and with Stipulation I.B of the PA and Section 7.3 of the CHPMP, and to the maximum extent feasible as determined by DTSC, in coordination with PG&E, Interested Tribes, and respective landowners.	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1b/c-6	Implementation of Additional Protective Measures (New Measure). Mitigation Measures CUL-1a-3 (Site Security); CUL-1a-3a (Professional Qualifications and Annual Site Condition Assessment); CUL-1a-3c (Coordination with BLM and San Bernardino County); CUL-1a-3d (Signage) CUL-1a-3e (Site Security); CUL-1a-8q (Implement Cultural Impact Mitigation Program); CUL-1a-9 (Preference for Previously Disturbed Areas); CUL-1a-13a (Implement Worker Education Training Program); and CUL-1a-15 (Future Activity Allowance Cultural Resources Survey) shall be implemented to further reduce impacts to historical resources other than the Topock TCP and/or unique archaeological resources prior to and during construction, operation and maintenance, and decommissioning, as prescribed in each measure which are described in detail above.	Prior to and during construction, operation and maintenance, and decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
CUL-1b/c-7	Compliance with SOI Standards (New Measure). Prior to the start of decommissioning activities, PG&E shall retain a qualified architectural historian who meets the Secretary of the Interior’s professional qualification standards for architectural history. The qualified architectural historian shall review the decommissioning plan to ensure that removal of the pipeline from the Old Trails Arch Bridge (36-027678), if proposed, would not materially impair the bridge. The architectural historian shall prepare a technical	Prior to the start of decommissioning activities	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
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CUL-3	<p>memorandum documenting the results of the review, and provide any recommendations to reduce impacts to less than significant, if necessary, prior to start of decommissioning activities.</p> <p>Implement the Paleontological Resources Management Plan (PRMP) and Paleontological Monitoring (Groundwater FEIR Measure with Revisions).</p> <p>PG&E shall comply with all requirements of the <i>Paleontological Resources Management Plan</i> (Arcadis 2015) related to paleontological resources prior to and during construction, operation and maintenance, and decommissioning. The following is a summary of the procedures in the PRMP, which includes: retention of a Principal Paleontologist to oversee paleontological monitoring and to be on-call in the event of discovery; paleontological resources awareness training; future survey of any areas ranked PYFC 3a or above if additional work is planned and they were not previously surveyed; paleontological monitoring of grading and trenching in known sensitive areas and also in the event that sensitive sediments are encountered elsewhere (monitoring of borings, regardless of depth or diameter, is not required); cease work measures and notification protocols in the event of a discovery; recovery of discovered fossils; documentation, preparation, identification, and analysis of recovered fossils; reporting; and curation of paleontological resources of scientific value at an accredited repository. Treatment and disposition of recovered fossils shall be conducted in coordination with the respective landowner.</p>	Prior to and during construction, operation and maintenance, and decommissioning activities			
CUL-4	<p>Mitigation Measure CUL-4: Discovery of Human Remains (Groundwater FEIR Measure with Revisions).</p> <p>In the event of the discovery of human remains, PG&E shall implement the requirements of Section 2.2 “<i>Protocols for Appropriate Treatment of Archaeological Materials</i>” and Section 2.15 “<i>Protocols for Reporting Discoveries of Cultural Importance</i>” the CIMP (as described above in Mitigation Measure CUL-1a-8q) and Section 8.2 “<i>Treatment of Any Human Remains, Funerary Objects, Ceremonial Objects, and Items of Cultural Patrimony</i>” and Appendix D “<i>Plan of Action</i>” of the CHPMP (see below). Consistent with Section D.4 of the CHPMP, the determination of whether remains are human or non-human will be made by qualified personnel, such as a physical or forensic anthropologist. In accordance with the CHPMP Appendix D (D.3.3), the BLM is responsible for notifying the appropriate Interested Tribes regardless of land ownership. Discoveries on federal land shall follow the procedures outlined in sections D.3.3.1 and D.3.9.1 of Appendix D of the CHPMP. Discoveries on non-federal land in Arizona shall follow the procedures outlined in Sections D.3.3.2 and D.3.9.2 of Appendix D CHPMP. Discoveries on non-federal land in California shall follow the procedures outlined in Sections D.3.3.3 and D.3.9.3 of Appendix D of the CHPMP. The following provides a summary of the plans, procedures, and requirements that govern actions to be taken in the event of the discovery of human remains.</p> <p>CHPMP Section 8.2:</p>	Prior to and during construction, operation and maintenance, and decommissioning activities			

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	<ul style="list-style-type: none"> Section VII.H of the PA stipulates that the CHPMP will include a Plan of Action to be implemented if human remains are discovered within the APE, and that the Plan of Action will address the roles of the PA Signatories, Tribes, and Invited Signatories; The PA stipulates further that the BLM will be the lead Federal Agency responsible for seeing that the terms of the Plan of Action are executed, and that human remains and funerary objects must be treated in a culturally appropriate and respectful manner. <p>CHPMP Appendix D – Section D.3.3: This section requires that, in the event that human remains are discovered within the Project Area and without respect to land ownership, PG&E will cease work and establish a protective buffer; ensure that the remains are not disturbed further and are treated with appropriate respect and cultural sensitivity; notify BLM within 24 hours; and cooperate with parties responsible for responsible for carrying out the treatment measures described in CHPMP Subsections D.3.3.1-D.3.3.3 (see below).</p> <p>CHPMP Appendix D – Sections D.3.3.1 and D.3.9.1 (discoveries on Federal land): Additional requirements of this section include:</p> <ul style="list-style-type: none"> Complying with the Native American Graves Protection and Repatriation Act (NAGPRA) and its Federal implementing regulations outlined in 43 Code of Federal Regulations (CFR) Part 10, which requires establishing a chain of command for the remains, identifying and notifying lineal descendants, and consultation with the appropriate Tribe(s) to identify and implement appropriate treatment. Following California Health and Safety Code 7050.5 et seq., which includes notifying the San Bernardino County coroner for discoveries in California and contacting the California Native American Heritage Commission (NAHC). Following Public Resources Code 5097.98, which includes designation of a Most Likely Descendant by the NAHC and consultation with the MLD. <p>CHPMP Appendix D - Sections D.3.3.2 and D.3.9.2 (discoveries on non-Federal land in Arizona): Additional requirements of this section include:</p> <ul style="list-style-type: none"> Contacting the Director of the Arizona State Museum (ASM) for discoveries in Arizona on "lands, other than lands owned or controlled by this state, any agency or institution of this state or any county or municipal corporations within this state." Complying with ARS 41-865, which includes consultation with the ASM, identifying the group with cultural affinity for the remains and/or objects, and consultation with the governing body of the group with cultural affinity to determine appropriate treatment and disposition of the remains and/or objects. <p>CHPMP Appendix D - Sections D.3.3.3 and D.3.9.3 (discoveries on non-Federal land in California): Additional requirements of this section include:</p>				

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GEO-1a	<ul style="list-style-type: none"> Complying with California Health and Safety Code 7050.5 et seq., which requires notifying the San Bernardino County coroner for discoveries in California and contacting the NAHC. Complying with Public Resources Code 5097.98, which includes designation of a MLD by the NAHC and consultation between the landowner and MLD to identify and implement appropriate treatment. 				
	Construction, Operation and Maintenance, and Decommissioning Impacts Related to Erosion of Soils (Groundwater FEIR Measure).				
	a) A DTSC-approved grading and erosion control plan, prepared by a California Registered Civil Engineer, shall be completed prior to implementation of any grading in areas of the site where there is a potential for substantial erosion or loss of top soils. The plan shall outline specific procedures for controlling erosion or loss of topsoil during construction, operation and maintenance, and decommissioning.	Prior to and during construction, operation and maintenance, and decommissioning	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
	b) To ensure soils do not directly or indirectly discharge sediments into surface waters as a result of construction, operation and maintenance, or decommission activities, PG&E developed a SWPPP as discussed in mitigation measure HYDRO-1. The SWPPP identifies best management practices (BMPs) that would be used to protect stormwater runoff and minimize erosion during construction. PG&E shall prepare plans to control erosion and sediment, prepare preliminary and final grading plans, and shall prepare plans to control urban runoff from the project site during construction, consistent with the substantive requirements of the San Bernardino County Building and Land Use Services Department for erosion control.				
	c) During road preparation activities, loose sediment shall be uniformly compacted consistent with the substantive San Bernardino County Building and Land Use Services Department requirements to aid in reducing wind erosion. Ongoing road maintenance including visual inspection to identify areas of erosion and performing localized road repair and regrading, installation and maintenance of erosion control features such as berms, silt fences, or straw wattles, and grading for road smoothness shall be performed as needed to reduce potential for erosion.				
	d) Regarding the potential for contaminated soils to be eroded and contribute contamination into receiving waters, Mitigation Measures GEO-1a and HAZ-2 shall be implemented. Mitigation Measure GEO-2 provides the provisions for mitigating erosion through BMPs which shall be implemented. Mitigation Measure				

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GEO-1b	HAZ-2 provides the provisions for safe work practices and handling of contaminated soils as investigation derived wastes.				
	Construction, Operation and Maintenance, and Decommissioning Impacts Related to Differential Compaction of Soils (Groundwater FEIR Measure).	Prior to and during construction, operation and maintenance, and decommissioning	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
	a) BMPs shall be implemented during construction, operation and maintenance, and decommissioning activities to minimize impacts on the affected areas. Such BMPs could include, but would not be limited to, the following: uniform compaction of roadways created for accessing the project area as per San Bernardino County Building and Land Use Services Department requirements, returning areas adversely affected by differential compaction to preexisting conditions when these areas are no longer needed, and continuing maintenance of access roads, wellhead areas, and the treatment facility areas.				
	b) Work area footprints shall be minimized to the greatest extent feasible to limit the areas exposed to differential compaction. Where possible, existing unpaved access roads and staging/working areas shall be reused and maintained for different stages of the construction. New graded areas for staging or for access roads shall be compacted to a uniform specification, typically on the order of 90 to 95% compaction and consistent with substantive San Bernardino County Building and Land Use Services Department requirements to reduce differential compaction and subsequent erosion of site soils.				
	c) After the completion of the operation and maintenance phase, the disturbed areas which result in increased potential for compaction shall be returned to their respective preexisting condition by regrading consistent with the preconstruction slopes as documented through surveys that may include topographic surveys or photo surveys. The areas will be returned to the surrounding natural surface topography and compacted consistent with unaltered areas near the access roads or staging areas in question. The habitat restoration plan prepared in compliance with Mitigation Measure BIO-1 includes restoration of native vegetation or other erosion control measures where revegetation would be infeasible or inadequate, for purposes of soil stabilization and erosion control of the project area.				
HAZ-1a	Spills or Releases of Contaminants during Operation and Maintenance Activities (Groundwater FEIR Measure with Revisions).	Begin at the start of construction and continue for life of project	PG&E would be responsible for the implementation of these measures. DTSC would be responsible		
	a) PG&E shall store, handle, and transport hazardous materials in compliance with applicable local, state, and federal laws.				

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	<p>b) All chemical storage and loading areas shall be equipped with proper containment and spill response equipment. BMPs to be implemented may include, but are not limited to, use of secondary containment in mixing and storage areas; availability of spill kits and spill containment booms, and appropriate storage containers for containment of the materials generated during the spill response. The Final Remedy Design provides engineering drawings of chemical storage and loading areas in Appendix D, specifications in Appendix E, and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), which shall all be implemented during construction, operation and maintenance, and decommissioning of the Project.</p> <p>c) A project-specific Hazardous Materials Business Plan (HMBP), chemical standard operating procedure (SOP) protocols and contingency plans shall be developed to ensure that proper response procedures would be implemented in the event of spills or releases. Specifically, the HMBPs and SOPs shall describe the procedures for properly storing and handling fuel on-site, the required equipment and procedures for spill containment, required personal protective equipment, and the measures to be used to reduce the likelihood of releases or spills during fueling or vehicle maintenance activities. BMPs to be implemented may include, but are not limited to, use of secondary containment in mixing and storage areas; availability of spill kits and spill containment booms, and appropriate storage containers for containment of the materials generated during the spill response. The field manager in charge of operations and maintenance activities shall be responsible for ensuring that these procedures are followed at all times. SOPs are provided in Appendix B to the C/RAWP (CH2M Hill 2015b); the HMBP in Appendix L to the Final Remedy Design (Operation and Maintenance Manual), Volume 1, Appendix E; and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), shall all be implemented during construction, operation and maintenance, and decommissioning of the Project.</p>		for ensuring compliance.		
HAZ-1b	<p>Spill or Release of Contaminants during Construction and Decommissioning Activities (Groundwater FEIR Measure with Revisions).</p> <p>a) Fueling areas and maintenance areas would be supplied with proper secondary containment and spill response equipment. The Final Remedy Design provides engineering drawings of chemical storage and loading areas in Appendix D, specifications in Appendix E, and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), which shall all be implemented</p>	Begin at the start of construction and continue for life of project	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	<p>during construction, operation and maintenance, and decommissioning of the Project.</p> <p>b) PG&E shall develop fueling SOP protocols and a contingency plan that would be implemented at all fueling areas on-site. The SOPs shall describe the procedures for properly storing and handling fuel on-site, the required equipment and procedures for spill containment, required PPE, and the measures to be used to reduce the likelihood of releases or spills during fueling or vehicle maintenance activities. Potential measures include but are not limited to, fuel storage in bermed areas, performing vehicle maintenance in paved and bermed areas, and availability of spill kits for containment and cleanup of petroleum releases. The field manager in charge of construction and decommissioning activities shall be responsible for ensuring that these procedures are followed at all times. SOPs are provided in Appendix B (CH2M Hill 2015b); the HMBP in Appendix L (Operation and Maintenance Manual), Volume 1, Appendix E; and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), shall all be implemented during construction, operation and maintenance, and decommissioning of the Project.</p> <p>c) PG&E shall comply with local, state, and federal regulations related to the bulk storage and management of fuels. The Final Remedy Design provides engineering drawings of chemical storage and loading areas in Appendix D; specifications in Appendix E (Operation and Maintenance Manual), Volume 3; the HMBP in Appendix L (Operation and Maintenance Manual), Volume 1, Appendix E; and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), which shall all be implemented during construction, operation and maintenance, and decommissioning of the Project.</p>				
HAZ-2	<p>Reasonably Foreseeable Releases of Chemicals from Excavated or Disturbed Soil (Groundwater FEIR Measure with Revisions)</p> <p>Subsequent to the Groundwater FEIR and in compliance with Groundwater FEIR Mitigation Measure HAZ-2, PG&E developed a Final Construction Health and Safety Plan provided in C/RAWP, Appendix D, and a Draft Operation and Maintenance Health and Safety Plan in the Final Remedy Design, Appendix L, Volume 5. A final Operation and Maintenance Health and Safety Plan will be submitted to DTSC and DOI during the start-up phase of the remedy, and should include any separate plans provided by contractors. The health and safety plans include procedures to mitigate potential hazards, which include the use of PPE, measures that provide protection from physical and chemical hazards that may be present at the site, decontamination procedures, and worker and health and safety monitoring criteria to be implemented during construction. The worker health and safety plans includes protective measures and PPE that are specific</p>	Begin at the start of construction and continue for life of project	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	<p>to the conditions of concern and meet the requirements of the U.S. Occupational Safety and Health Administration's (OSHA's) construction safety requirements and Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120). In accordance with OSHA requirements, appropriate training and recordkeeping shall also be a part of the health and safety program. The health and safety plans shall be certified by a Certified Industrial Hygienist in accordance with OSHA regulations. The worker health and safety plan shall be provided to the construction workers for review and all workers shall be required to sign the plan, which will be kept on the construction site at all times. Contractors and subcontractors may also provide their own health and safety plans, providing the contractors and subcontractors health and safety plans are compliant with OSHA requirements and have been provided to PG&E and DTSC for review.</p> <p>Worker safety training shall occur prior to initiation of ground- disturbing activities. Training shall include the review of all health and safety measures and procedures. All workers and engineering inspectors at the site shall provide written acknowledgement that the soils management plan (discussed below), worker health and safety plan, and any existing community health and safety plan were reviewed and training was received prior to commencement of construction activities.</p> <p>The following are specific elements and directives that shall be included in the health and safety plan and implemented by PG&E during construction, operation and maintenance, and decommissioning of this project:</p> <ul style="list-style-type: none"> a) Vehicles traveling on unpaved roadways or surfaces would be directed to avoid traveling in areas where contaminated soils are known to be present; vehicle speeds shall be controlled (e.g., limited to 15 mph or slower) to limit generation of dust; measures, such as wetting of surfaces, will be employed to prevent dust generation by vehicular traffic or other dust-generating work activities. b) Pre-mobilization planning shall occur during which the likelihood of encountering contaminated soils shall be reviewed along with the Hazardous Materials Business Plan, site-specific health and safety plan, and SOPs so that the procedures are followed and the contingencies for handling contaminated soils are in-place prior to implementing the field operations. c) Should evidence of contaminated soil be identified during ground-disturbing activities (e.g., noxious odors, discolored soil), work in this area will immediately cease until soil samples can be collected and analyzed for the presence of contaminants as directed by the site supervisor or the site safety officer. Contaminated soil shall be managed and disposed of in accordance with the Project-specific health and safety plan and soil management plan. The health and safety plan and soil management plan shall be reviewed by DTSC 				

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	<p>before beginning any ground-disturbing activities. While the Project is exempt from the requirements of the San Bernardino County Division of Environmental Health, the health and safety plan shall be prepared in general accordance with the substantive requirements of this agency.</p> <p>d) In the event that drilling sites must be located within areas of suspected soil contamination, the appropriate PPE shall be worn by all personnel working in these areas and methods specified in the health and safety plan used to control the generation of dust. When working in these areas, personnel shall be required to follow all guidance presented in the site-specific health and safety plan and soil management plan. The site-specific health and safety plan shall include provisions for site control such as, but not limited to, delineation of the exclusion, contaminant reduction and support zones for each work area, decontamination procedures, and procedures for the handling of contaminated soils and other investigation derived wastes. Soil that is excavated shall be loaded directly into containers such as roll-off bins; dust suppression methods shall be used prior to and during loading of soils into the bins. Suspected contaminated soils shall be segregated from suspected uncontaminated soils.</p> <p>e) Personnel working at the site shall be trained in Hazardous Waste Operations.</p> <p>f) All soil excavated and placed in roll-off bins or trucks for transportation off-site shall be covered with a tarp or rigid closure before transporting, and personnel working in the area shall be positioned upwind of the loading location, as practicable.</p>				
HAZ-3	<p>Final Groundwater Remedy Decommissioning Plan (New Measure).</p> <p>Upon achieving the Remedial Action Objectives for the groundwater remedy, PG&E shall provide a written request with documentation to the DTSC and DOI requesting approval for decommissioning the groundwater remedy. Upon approval from DTSC and DOI, PG&E shall then prepare and submit a Final Groundwater Remedy Decommissioning Plan within 120 days to DTSC and DOI for their review and approval. This plan shall comply with the requirements in the Programmatic Agreement (BLM 2010), the Cultural and Historic Properties Management Plan (BLM 2012), the Consent Decree and Appendix C, Scope of Work, to Consent Decree (DOI 2013) (or functional equivalent if those document names change in the future), and the mitigation measures included within this SEIR. This plan shall include the decommissioning specifications and procedures currently described in the Final Remedy Design, but shall be updated to incorporate technology and regulatory changes, if any. In particular, the updated Final Groundwater Remedy Decommissioning Plan shall check for updates to waste disposal acceptance criteria to identify the appropriate disposal or recycling facilities for the Final Groundwater Remedy infrastructure to be</p>	<p>After approval for decommissioning is received from the DTSC with concurrence from the DOI</p>	<p>PG&E shall be responsible for the preparation and implementation of this measure. DTSC would be responsible for ensuring compliance.</p>		

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	removed, and for changes in well abandonment procedures by regulatory agencies (the States of California and Arizona, and the Counties of San Bernardino [California] and Mohave [Arizona]).				
HYDRO-1	Groundwater FEIR Mitigation Measure HYDRO-1, Exceedance of Water Quality Standards (Groundwater FEIR Measure with Revisions).				
HYDRO-1a/2a/3a	<p>Construction Best Management Practices Plan (Groundwater FEIR Measure with Revisions).</p> <p>Subsequent to the Groundwater FEIR and as noted in the Regulatory Background, the Construction General Permits were updated for California (2014) and Arizona (2013). In compliance with the Groundwater FEIR Mitigation Measures HYDRO-1, HYDRO-2, and HYDRO-3, and incorporating the construction general permit updates, PG&E prepared a BMP Plan for construction activities (C/RAWP, Appendix M; CH2M 2015b). The BMP Plan complies with the substantive requirements of the California and Arizona Construction General Permits, as well as all other applicable federal, state, and local permit and regulatory requirements, even if a permit is not required pursuant to CERCLA, for purposes of ensuring the protection of receiving water quality. Details of the BMPs are provided in the BMP Plan and are summarized below. Site workers shall be trained in the implementation of these BMPs.</p> <p>Erosion Control BMPs: The following measures shall be used to reduce erosion and control sediment:</p> <ul style="list-style-type: none">• Preservation of Existing Vegetation – Existing vegetation will be preserved to the maximum extent practicable to facilitate protection of surfaces from erosion and help control sediments. To the extent practical, remedy facilities have been located on previously disturbed areas. In the event that existing vegetation needs to be disturbed, areas that need to be preserved will be identified by a qualified biologist and marked with temporary fencing. Site workers will be informed of the limits of disturbance within the construction site and will be instructed to keep clear of delineated areas.• Geotextiles and Mats – Natural (e.g., excelsior, straw, coconut) or synthetic (usually polyethylene) materials will be used to reduce soil erosion by wind or water.• Road Preparation and Maintenance – During road preparation activities, loose sediment will be uniformly compacted, consistent with the substantive San Bernardino County Building and Land Use Services Department requirements, to aid in reducing wind erosion. Ongoing road maintenance will include: (1) visual inspections to identify areas of erosion, (2) localized road repair and regrading, installation, and maintenance of erosion control features such as berms, silt fences, or straw wattles, (3) grading for road smoothness,	Before and during ground-disturbing activities, operation and maintenance activities, and prior to the start of decommissioning	PG&E shall be responsible for the preparation and implementation of this measure. DTSC would be responsible for ensuring compliance.		

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	and (4) measures to reduce water erosion, such as clearing ditches and culverts of debris.				
	<p>Sediment Control BMPs – The following materials would be used to retain sediment in place where soil is being disturbed by construction processes, to intercept runoff and reduce flow velocity, and to allow sediment to settle from runoff before water leaves the construction site.</p> <ul style="list-style-type: none"> • Silt Fences – Silt fences are typically used in combination with sediment basins and sediment traps as erosion control measures. • Fiber Rolls/Sediment Wattles – These consist of aspen wood excelsior, straw, flax, or other similar materials rolled and bound into tight tubular rolls and placed on the face of slopes at regular intervals, depending on steepness of slopes. Fiber rolls/sediment wattles will be inspected prior to a forecasted rain event and after rain events to ensure the fiber rolls are working properly. Sediment accumulated by the fiber rolls will be removed to maintain the effectiveness of the fiber rolls. • Gravel Bag Berms – Gravel bag berms can be used as an alternative to fiber rolls and sediment wattles. If used, they will be installed prior to rain events to form a barrier to intercept runoff or reduce its velocity. Gravel bags will also be used, if necessary, during trenching activities when stockpiles are on-site. In the event that gravel bag berms are used as perimeter erosion control, bags will be stacked, one on top of the other (two high). When used to anchor stockpiles, the bags will be placed one high. • Sandbag Berms – Sandbag berms can also be used as an alternative to fiber rolls and sediment wattles. If used, they will be installed prior to rain events to form a barrier to intercept runoff or reduce its velocity. Sandbags will also be used, if necessary, during trenching activities when stockpiles are left overnight. In the event that sandbag berms are needed, they will be placed around the staging area and trenching area. • Straw-Bale Barriers – Straw-bale barriers can also be used as an alternative to fiber rolls, gravel bag berms, and sandbag berms. <p>Material Delivery and Storage – Proper management practices for delivery and storage of materials will be implemented to ensure minimal discharge or elimination of discharge of these materials to the storm drain systems or waterways. Construction materials and equipment will be parked and stored in the staging area. Materials subject to erosion from rain events within the storage area will be covered during nonworking days and prior to and during rain events. Storage and transfer of toxic or hazardous materials (e.g., ethanol, acids for well cleaning) will be on impervious surfaces appropriate to the stored materials.</p>				

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	<p>Material Use – Proper use of materials will be implemented to ensure minimal or complete elimination of discharge to the storm drain systems or waterways. Spill cleanup materials will be kept near the construction and staging areas. Leaks and spills will be cleaned up immediately using proper absorbent materials, which will then be disposed of as hazardous waste, unless determined to be non-hazardous waste.</p> <p>Stockpile Management – Stockpile management was discussed above in “Runoff from Soil Stockpile at Soil Processing Area.”</p> <p>Spill Prevention and Control – Spill prevention and control procedures and practices will be implemented in conjunction with the Waste Management Plan to prevent and control spills anytime chemicals and/or hazardous materials are stored on the construction site. Leaks and spills will be immediately cleaned up to the extent possible using absorbent materials, which will then be disposed of properly. Leaks and spills shall not be covered and/or buried or washed with water. Kits with appropriate spill response equipment will be kept near the construction and staging areas. The materials used for cleaning will not be allowed to enter storm drains or watercourses and will be collected and disposed of in accordance with BMPs. In particular, absorbents used to clean up spills of hazardous materials or waste must be managed as hazardous waste unless characterized as non-hazardous.</p> <p>Solid Waste Management – Solid waste management procedures and practices will be implemented at the beginning and throughout the Project. Solid waste, consisting primarily of asphalt concrete waste, shall be loaded directly onto trucks for off-site disposal. Loose debris will be picked up daily. Trash and scrap receptacles shall be placed at convenient locations to promote proper disposal of solid wastes. Receptacles shall be provided with lids or covers to prevent windblown litter. Hazardous wastes shall be accumulated at appropriate collection locations following appropriate labeling and management requirements pursuant to Title 22, California Code of Regulations.</p> <p>Concrete Waste Management – Concrete waste management procedures will be implemented where concrete is used as a construction material or where concrete dust and debris result from demolition activities. The concrete waste containers will be placed a minimum 50 feet from any drainage ways. Washouts will include secondary containment so that there is no discharge into the underlying soil and onto the surrounding areas. Watertight containers with lids and secondary containment, manufactured for the expressed purpose of containing waste concrete and its liquid residue, may be used. Containers will be emptied or removed from the project site when 75 percent of the full capacity has been reached.</p> <p>Sanitary/Septic Waste Management – Sanitary/septic waste management procedures and practices are implemented at construction sites when a temporary or portable sanitary/septic waste system exists. Sanitary facilities will be located away from Staging Areas 6 and 7 (due to proximity to culturally</p>				

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	<p>sensitive areas), drainage facilities, waterways, and from traffic circulation. In the event of high winds or a risk of high winds, temporary sanitary facilities will be secured with spikes or weighed down to prevent overturning. The sanitation subcontractor will monitor on-site sanitary/septic waste storage and disposal procedures on a weekly basis in accordance with the sanitary/septic waste management BMPs. Wastewater will not be discharged or buried. Waste will be removed and disposed off-site. Regular waste collection should be arranged before facilities overflow. The sanitary facility will be located a minimum of 50 feet away from drainage facilities and away from waterways and traffic circulation.</p> <p>Liquid Waste Management – Liquid waste management procedures will be employed to prevent the discharge of pollutants from liquid waste to the storm drain systems or watercourses. Liquid waste management will be applied if non-hazardous residuals or wastes are generated by construction activities.</p> <p>Tracking Control BMPs – A temporary construction entrance is defined as a stabilized point of entrance/exit to a construction site to reduce the tracking of mud and dirt onto private or public paved roads by construction vehicles. A temporary construction entrance will be established at applicable paved intersections and entry points to prevent sediment tracking. The temporary construction entrance will be inspected routinely.</p> <p>Good Housekeeping BMPs – Good housekeeping measures will be implemented on-site for the duration of the project and include the following:</p> <ul style="list-style-type: none"> • Store chemicals in watertight containers (with appropriate secondary containment) in a completely enclosed storage cabinet, trailer, or sealed drums shed to prevent spillage and leakage. • Minimize exposure of construction materials to precipitation. • Cover waste disposal containers at the end of every business day and during rain events. • Prevent discharges from waste disposal containers to the stormwater drainage system or receiving water. • Prevent oil, grease, or fuel from leaking into the ground, storm drains, or surface waters. • Immediately clean up leaked material and dispose of properly. • Establish and maintain effective perimeter controls and stabilize construction entrances and exits to control erosion and sediment discharges from the site. • Conduct regular stormwater tailgate meetings with the workforce when the project is staffed and work is under way. 				
HYDRO-1b/2b/3b	O&M SWPPP (Groundwater FEIR Measure with Revisions).	Before and during ground-disturbing	PG&E shall be responsible for the		

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	<p>Subsequent to the Groundwater FEIR and in compliance with the Groundwater FEIR Mitigation Measures HYDRO-1, HYDRO-2, and HYDRO-3, PG&E prepared a SWPPP for operation and maintenance activities (O&M SWPPP; Final Remedy Design, Appendix L, Volume 1, Appendix D; CH2M Hill 2015a) to comply with the substantive requirements of the 2015 California General Industrial Storm Water Permit. The O&M SWPPP requires the BMPs summarized below. Site workers shall be trained in the implementation of these BMPs.</p> <p>Good Housekeeping, including:</p> <ul style="list-style-type: none"> Observe all outdoor areas associated with industrial activity; including storm water discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by off-facility materials or storm water run-on to determine housekeeping needs. Clean and dispose of properly any identified debris, waste, spills, tracked materials, or leaked materials Minimize or prevent material tracking Minimize dust generated from industrial materials or activities Ensure that all facility areas impacted by rinse/wash waters are cleaned as soon as possible Cover all stored industrial materials that can be readily mobilized by contact with storm water Contain all stored non-solid industrial materials or wastes that can be transported or dispersed by the wind or contact with storm water Prevent disposal of any rinse/wash waters or materials into the storm water conveyance system Minimize stormwater discharges from non-industrial areas (e.g., stormwater flows from employee parking area) that contact industrial areas of the facility Minimize authorized non-storm water discharges from non-industrial areas (e.g., potable water, fire hydrant testing) that contact industrial areas of the facility <p>Preventive Maintenance, including:</p> <ul style="list-style-type: none"> Identify all equipment and systems used outdoors that may spill or leak pollutants Observe the identified equipment and systems to detect leaks, or identify conditions that may result in the development of leaks Establish inspection schedule and maintenance schedule of identified equipment and systems 	activities, operation and maintenance activities, and prior to the start of decommissioning	preparation and implementation of this measure. DTSC would be responsible for ensuring compliance.		

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	<ul style="list-style-type: none"> Establish procedures for prompt maintenance and repair of equipment, and maintenance of systems when conditions exist that may result in the development of spills or leaks <p>Material Handling and Waste Management, including:</p> <ul style="list-style-type: none"> Prevent or minimize handling of industrial materials or wastes that can be readily mobilized by contact with stormwater during a storm event Contain all stored non-solid industrial materials or wastes that can be transported or dispersed by the wind, erosion or contact with stormwater during handling Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use Divert run-on and stormwater generated from within the facility away from all stockpiled materials Clean all spills of industrial materials and/or wastes that occur during handling Observe and clean as appropriate, any outdoor material/ or waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes <p>Erosion and Sediment Controls, including:</p> <ul style="list-style-type: none"> Implement effective wind erosion controls Provide effective stabilization for inactive areas, finished slopes, and other erodible areas prior to a forecasted storm event Maintain effective perimeter controls and stabilize all site entrances and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site Divert run-on and storm water generated from within the facility away from all erodible materials <p>The Industrial General Permit requires that the site, to the extent feasible, implement and maintain any advanced BMPs necessary to reduce or prevent discharges of pollutants in its stormwater discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability. Advanced BMPs may include:</p> <ul style="list-style-type: none"> Exposure Minimization BMPs (such as storm resistant shelters that prevent the contact of stormwater with the industrial materials or areas of industrial activity) Storm Water Containment and Discharge Reduction BMPs that divert, infiltrate, reuse, contain, retain, or reduce the volume of stormwater runoff 				

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	<ul style="list-style-type: none"> Treatment Control BMPs (the implementation of one or more mechanical, chemical, biologic, or any other treatment technology) Storm resistant shelters (i.e., buildings) for Operations at the TW Bench, Hazardous Materials storage at the TCS, and Carbon Amendment facilities at the MW-20 Bench Storm water drainage at the TW Bench to divert stormwater run on and reduce the volume of stormwater runoff Features in access roads to reduce erosion and divert storm water from remedy facilities such as wells and associated control equipment 				
HYDRO-4	<p>Manganese Treatment System (New Measure).</p> <p>Sampling as described in the Final Remedy Design, specifically in the Sampling and Monitoring Plan provided in the Operation and Maintenance Manual (CH2M Hill 2015a, Appendix L), shall be implemented throughout the duration of the groundwater remedy and shall include groundwater monitoring for manganese. If manganese exceeds concentrations as specifically identified in Table 2.2-1 of Appendix L, O&M Volume 2 (e.g., 1 to 2.5 mg/L at California wells downgradient of the IRZ, or above baseline concentrations in Arizona wells), then PG&E shall evaluate and implement operational modifications to control the manganese in accordance with Section 2, O&M Volume 2. If operational modifications are unsuccessful at decreasing manganese concentrations to below the action levels cited on the above-referenced Table 2.2-1 and as determined by DTSC, then the contingency measure of manganese treatment shall be implemented. As described in the Project Description (Section 3.6.3.1) of this SEIR and in Appendix J of the Final Remedy Design, PG&E shall implement manganese treatment using the Dissolved Metals Removal System in the Remedy-Produced Water Conditioning Plant if capacity is available or install an adsorptive or greensand filtration treatment system (or equivalent) preferentially located at the Remedy-Produced Water Conditioning Plant if space is available. If capacity and space are not available at the Remedy-Produced Water Conditioning Plant, the manganese treatment system could be located at the TW Bench or the MW-20 Bench (after the IM-3 system is decommissioned/removed). A manganese treatment system shall remain operational until the manganese concentrations remain below concentrations identified in Table 2.2-1 and DTSC approves of the cessation of the system.</p>	Commence if elevated manganese concentrations remain above anticipated concentrations identified in Table 2.2-1 of the O&M Volume 2, Appendix L after operational modifications prove to be ineffective. Manganese treatment would continue until concentrations decrease to below objectives and with the approval of the DTSC.	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
HYDRO-5	<p>Contingent Freshwater Pre-Injection Treatment (New Measure).</p> <p>To implement the Final Groundwater Remedy such that PG&E will be able to respond to the triggering conditions described below, PG&E shall implement the following measures.</p>	Commence at construction and continue for life of the project	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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HYDRO-5a	<p>Incorporate Arsenic Monitoring of Freshwater Injection into the Sampling and Monitoring Plan (New Measure).</p> <p>Sampling as described in the Final Remedy Design, specifically in the Sampling and Monitoring Plan provided in the Operation and Maintenance Manual (CH2M Hill 2015a, Appendix L), shall be implemented throughout the duration of the groundwater remedy, even after injection ceases. Wells used to monitor freshwater supply injection shall be sampled and analyzed in accordance with the Project monitoring program for arsenic and other chemicals as described in the Sampling and Monitoring Plan. PG&E shall install and monitor wells designated in the Final Remedy Design for arsenic monitoring located approximately 150 feet and 225 feet from each freshwater injection well to comply with the SWRCB's requirements for freshwater injection with arsenic concentrations above the California MCL. Monitoring shall commence prior to freshwater injection and continue until observed arsenic concentrations return to pre-injection levels pursuant to Mitigation Measure HYDRO 5d. Monitoring wells for the freshwater injection area shall initially be sampled monthly for the first two quarters, then quarterly thereafter, unless the monitoring interval is modified with prior DTSC approval. The results of this monitoring shall determine whether Mitigation Measures HYDRO-5b and 5c are implemented</p>	Commence at construction and continue for life of the project	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
HYDRO-5b	<p>Assessment and Implementation of Interim Action if the California MCL is Exceeded 150 Feet Radially from Freshwater Injection Point (New Measure).</p> <p>If, as a result of the monitoring required in Mitigation Measure HYDRO-5a, the concentration of arsenic at the leading edge of the arsenic plume is found to exceed the arsenic water quality objective (California MCL) 150 feet radially from the freshwater injection point, PG&E shall immediately reassess their groundwater modeling and identify interim actions to limit the migration of the arsenic plume. PG&E shall submit the assessment and proposed action to DTSC within 60 days (or other timeframe directed by DTSC) of confirmed detections above water quality objectives.</p>	Commence at construction and continue for life of the project	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
HYDRO-5c	<p>Implementation of Alternatives if California MCL is Exceeded for Arsenic 225 feet from any Freshwater Injection Point (New Measure).</p> <p>If the concentration of arsenic at the leading edge of the plume migrates and exceeds the water quality objective (California MCL) at 225 feet radially from the freshwater injection point, PG&E shall promptly notify DTSC and resample within 30 days. If the expedited resample confirms the exceedance, PG&E shall immediately cease fresh water injection. The injection shall not recommence until PG&E either blends the water source to below the California MCL at the point of injection; constructs and re-routes any contingent freshwater supply lines and appurtenances to the Contingent Freshwater Pre-Injection Treatment System to pre-treat the water and remove arsenic before injection; or proposes a</p>	Commence at construction and continue for life of the project	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	new water source that will comply with the California water quality objectives for injection. PG&E shall obtain approval from DTSC prior to implementation of the options identified above. Pre-injection treatment of the freshwater shall continue until further monitoring indicates that pre-treatment is no longer needed and DTSC approves of cessation of pre-treatment.				
HYDRO-5d	Post-Remedy Arsenic Monitoring (New Measure). The SWRCB provided remedy requirements associated with injection of groundwater containing naturally occurring arsenic in a 2013 position letter (SWRCB 2013). To ensure that water quality objectives are not exceeded in groundwater within freshwater injection areas after completion of the remedy, sampling of the arsenic monitoring wells and possibly other wells (as directed by DTSC) would continue under the Sampling and Monitoring Plan for an estimated 20 years and possibly longer after completion of active treatment to ensure that arsenic concentrations are within and remain at pre-remedy background levels. The sampling would cease after results demonstrate that the concentrations of arsenic remain within water quality objectives and DTSC approves of ceasing the monitoring for arsenic.	Commence at construction and continue for life of the project	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
HYDRO-6	Protection of Non-Project Water Supply Wells (New Measure). To minimize any potential impacts to non-Project water supply wells associated with the long-term operation and maintenance of the Final Groundwater Remedy Project, PG&E shall implement the mitigation measure described below.	During the use of freshwater wells	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		
HYDRO-6a	Incorporate Non-Project Water Supply Wells and/or Additional Monitoring Wells into the Monitoring Program (New Measure). <ul style="list-style-type: none"> For water supply wells located within about one mile of HNWR-1A (currently Topock-2, Topock 3, Marina-1, Sanders, Smith, PGE-9N, PGE-9S, MTS-1, MTS-2, and GSRV-2), PG&E shall request well construction information and access to sample, test and assess current well conditions. If access is granted, PG&E shall add the non-Project water supply wells to the monitoring program (Appendix L, O&M Volume 2, Sampling and Monitoring Plan, Section 5.4). If access is denied, PG&E will alert DTSC of such response in a timely manner and provide associated documentation. If the well owner does not otherwise respond within 60 days, PG&E shall initiate a second request. If the well owner still does not respond, PG&E will alert DTSC of such response in a timely manner and provide documentation of both attempts to contact the owner. If new water supply non-Project wells are installed or discovered in the general area in the future, DTSC may direct PG&E to take additional action for access and add them to the wells listed above at any time. 	During the use of freshwater wells	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

TABLE 1
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE TOPOCK COMPRESSOR STATION FINAL GROUNDWATER REMEDY PROJECT

Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
				Action	Date Completed
	<ul style="list-style-type: none"> PG&E shall submit a well installation work plan to DTSC describing installation of a new nested monitoring well located between HNWR-1 and wells Topock-2/Topock-3 since wells Topock-2/Topock-3 are currently the largest producing non-Project supply wells in the area. The work plan shall also propose the installation of any additional monitoring wells that are needed to ensure protection of the water resource in the vicinity of the non-Project water supply wells. PG&E shall submit the well installation work plan to DTSC within twelve months of DTSC's approval of the remedy design and would be implemented only after DTSC's review and approval. Up to ten well locations from the total borehole count evaluated in this SEIR can be allocated for the monitoring of water quality to protect non-Project water supply wells. Overtime, wells may be added to or removed from the monitoring program (with prior DTSC approval) based on accumulated data or lack thereof. Monitoring of wells identified in this mitigation measure shall initially be quarterly for the first two years of operation and include groundwater levels and chemical constituents to establish baseline conditions and assess seasonal variations in the area of the non-Project water supply wells and monitoring wells. Pressure transducers shall be fitted to monitoring wells, Well HNWR-1, Site B, and the above-listed non-Project water supply wells (some which are not currently pumping) to track and evaluate pumping effects over time and to assist with assessments required below in Mitigation Measure HYDRO-6b and 6c. Chemical testing shall include, at a minimum, Title 22 metals, Cr(VI), stable isotopes of hydrogen and oxygen, general minerals, and TDS. After the second year of monitoring, sampling frequencies may be reduced to semi-annually for two additional years and annually thereafter with DTSC approval. The well network, monitoring frequency, pressure transducer monitoring, and chemical constituents may be modified with DTSC approval. 				
HYDRO-6b	Water Supply Mitigation (New Measure). <ul style="list-style-type: none"> If non-pumping groundwater elevations substantially decrease from baseline conditions established under HYDRO-6a in a monitored non-Project water supply well (e.g., below top of well screen, below pump depths, or causes significant decrease in well yield) or a similar groundwater elevation decrease is observed in a water resource protection monitoring well described in HYDRO-6a, PG&E shall inform DTSC as soon as practicable and no longer than two weeks (unless modified with DTSC approval) after receipt of data documenting such an event. Additionally, PG&E will assess well and aquifer conditions to evaluate if the Project has caused a substantial decrease in groundwater elevations/well yield. PG&E shall promptly provide its 	During the use of freshwater wells	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	<p>assessment to DTSC for review. At a minimum, the assessment shall consider the following conditions:</p> <ul style="list-style-type: none">○ Historical well usage○ Well condition○ Anticipated drawdown effects○ Regional groundwater level trends <ul style="list-style-type: none">• If PG&E or DTSC determines that the Project has adversely impacted a non-Project water supply well to the extent that the Project is determined to be the primary cause, or one of the primary contributing causes, of the reduction in well yield or elevation such that the well does not provide sufficient water, PG&E shall promptly notify the well owner. PG&E shall coordinate with the well owner(s) to arrange for an interim drinking water supply if necessary, and develop a plan (for DTSC approval) which will assist in restoring the water resource by using measures that may include:<ul style="list-style-type: none">○ Lowering the well pump○ Rehabilitating the well○ Deepening the existing well○ Providing short and/or long term replacement of water supply○ Constructing a new replacement well,○ Modifying remedy operations (e.g., placing a packer in HNWR-1A) <p>An alternate course of action may be considered, provided it is mutually agreeable to DTSC, PG&E, and the well owner.</p> <p>Unless an alternative period is approved by DTSC, the plan/alternate course of action should be provided to DTSC for approval within 30 days of determining that the Project adversely impacted a non-Project water supply well.</p>				
HYDRO-6c	<p>Water Quality Mitigation (New Measure).</p> <ul style="list-style-type: none">• If the groundwater quality of a non-Project water supply well deteriorates by exceeding water quality objectives (e.g., MCLs for drinking water wells) and baseline conditions established pursuant to HYDRO-6a, PG&E will immediately notify DTSC and DOI and take steps to collect confirmation samples from the well within 60 days of original sample collection unless modified with DTSC approval. PG&E shall identify/confirm the specific uses of the well and inform DTSC, DOI, the Arizona Department of Environmental Quality, and the well owner of the deterioration as soon as possible (e.g., within 7 days of	During the use of freshwater wells	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	<p>receiving confirmation samples results). This shall include PG&E providing both the initial and confirmation sample data to agencies and well owner even if the initial exceedance is not confirmed.</p> <ul style="list-style-type: none">If PG&E or DTSC determines that the Project has adversely impacted a non-Project water supply well to the extent that the Project is determined to be the primary cause, or one of the primary contributing causes, of the reduction in water quality, PG&E shall immediately notify the well owner. PG&E shall coordinate with the well owner(s) to arrange for an interim drinking water supply if necessary, and develop a plan (for DTSC approval) which will assist in restoring the water resource by using measures which may include:<ul style="list-style-type: none">Deepening the existing wellProviding short and/or long term replacement of water supplyConstructing a new replacement wellConducting water treatment,Modifying remedy operations (e.g., placing a packer in HNWR-1A) <p>An alternate course of action may be considered, provided it is mutually agreeable to DTSC, PG&E and the well owner.</p> <p>The plan/alternate course of action should be provided to DTSC for approval within 30 days, unless modified with DTSC approval, of determining that the Project adversely impacted a non-Project water supply well.</p> <ul style="list-style-type: none">If the groundwater quality of any well installed as part of HYDRO-6a deteriorates by exceeding water quality objectives (e.g., MCLs for drinking water wells) and baseline conditions, PG&E shall conduct confirmation sampling and promptly assess aquifer conditions to evaluate if the Project has adversely impacted the well. PG&E shall promptly inform DTSC, DOI, and the Arizona Department of Environmental Quality of any adverse impacts and provide an assessment with any recommendations for review and approval.				
NOISE-2	<p>Mitigation Measure NOISE-2: Potential Impacts to Noise Levels and Noise Standards (Groundwater FEIR Measure with Revisions).</p> <ul style="list-style-type: none">Construction equipment shall be properly maintained per manufacturer specifications and fitted with the best available noise-suppression devices (e.g., mufflers, silencers, wraps). All impact tools shall be shrouded or shielded, and all intake and exhaust ports on power equipment shall be muffled or shielded.	During all initial construction activities, during operation and maintenance, and during decommissioning	PG&E shall be responsible for the implementation of these measures. DTSC shall be responsible for ensuring compliance.		

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	<ul style="list-style-type: none"> Construction equipment shall not idle for extended periods of time (more than 15 minutes) when not being utilized during construction activities. A notable exception is when a support vehicle is needed to remain running for health and safety reasons (i.e., air conditioning), consistent with health and safety procedures. Construction activities shall include, but not limited to, the use of berms, stockpiles, dumpsters, and/or bins to shield the nearest noise-sensitive receptor adjacent to construction activities to within acceptable non-transportation noise level standards. When construction activities are conducted within the distances outlined earlier (i.e., 1,850 feet and 5,830 feet from California receptors and 330 feet and 735 feet from Arizona receptors for daytime and nighttime noise, respectively) relative to noise-sensitive uses in the project area, noise measurements shall be under the supervision of a qualified acoustical consultant at the nearest noise-sensitive land use relative to the construction activities with a sound level meter that meets the standards of the American National Standards Institute (ANSI Section S14 1979, Type 1 of Type 2) to ensure that construction noise associated with the project component complies with applicable daytime and nighttime noise standards. Coordination with the Tribes and appropriate landowner(s) shall occur to allow opportunity for input in determining noise monitoring locations. If noise levels are still determined to exceed noise standards, temporary engineered acoustical barriers shall be erected as close to the construction activities as feasible, breaking the line of sight between the source and receptor where noise levels exceed applicable standards. Coordination with the Tribes shall occur in a manner consistent with the Cultural Impact Mitigation Program (CIMP; see Appendix H to the C/RAWP) throughout all Project phases, including input in determining constraints in locating temporary noise barriers to avoid or minimize physical impact to cultural resources. All acoustical barriers shall be constructed with material having a minimum surface weight of 2 pounds per square foot or greater and a demonstrated Sound Transmission Class (STC) rating of 25 or greater as defined by the American Society for Testing and Materials' Test Method E90. Placement, orientation, size, and density of acoustical barriers shall be specified by, or under the direct supervision of, a qualified acoustical consultant. A disturbance coordinator shall be designated by the PG&E, which will post contact information in a conspicuous location near groundwater project activity areas so that it is clearly visible to nearby noise-sensitive receptors as identified in Figure 4.7-1 and Interested Native American Tribes (Chemehuevi Indian Tribe, Cocopah Indian Tribe, 				

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Mitigation Number	Mitigation Measure	Timing/ Schedule	Implementation Responsibility	Completion of Implementation	
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NOISE-1	<p>Colorado River Indian Tribes, Fort Mojave Indian Tribe, and the Hualapai Indian Tribe). The coordinator will manage and thoroughly investigate complaints resulting from the Project-related noise to ensure resolution. Reoccurring disturbances will be evaluated by a qualified acoustical consultant retained by PG&E to ensure compliance with applicable standards. Noise complaints shall be reported to DTSC as soon as practicable and no more than 72 hours upon receipt of complaint. Resolutions will be recorded, tracked, and reported to DTSC on a monthly basis. The disturbance coordinator will contact nearby noise-sensitive receptors as labeled in Figure 4.7-1 and Interested Tribes, advising them of the Project activity schedule. The disturbance coordinator will also consider the timing of Project activities in relation to Tribal ceremonial events that are sensitive to noise in a manner consistent with the Cultural Impact Mitigation Program (CIMP) Section 2.11 (see Appendix H to the C/RAWP).</p> <ul style="list-style-type: none"> This shall be achieved in part through annual project update mailings (could be combined with other annual project mailings) to potentially impacted owners/occupants of sensitive land uses to give notice of possible disturbances and impacts. The mailing shall also identify the disturbance coordinator's contact information. 				
	<p>Mitigation Measure NOISE-1: Short-Term Groundborne Vibration Levels Caused by Project Activities near Sensitive Receptors (Groundwater FEIR Measure with Revisions).</p> <ul style="list-style-type: none"> New wells shall be constructed a minimum of 45 feet from vibration-sensitive receptors, as feasible. Constructing new wells within 30 feet of vibration-sensitive land uses located in California and 275 feet of vibration-sensitive land uses located in Arizona shall be avoided. A disturbance coordinator shall be designated by PG&E, which will post contact information in conspicuous locations near Project activity areas such as on construction fencing or trailers, but with consideration to culturally sensitive areas such as the Topock Maze. Signage will be clearly visible to nearby vibration-sensitive receptors as identified in Figure 4.7-1. The coordinator will manage complaints resulting from the construction vibration. Reoccurring disturbances will be evaluated by a qualified acoustical consultant retained by the project applicant to ensure compliance with applicable standards. The disturbance coordinator will contact nearby vibration-sensitive receptors, advising them of the construction schedule. This shall be achieved in part through annual project update mailings (could be combined with other annual project mailings) to owners/occupants of potentially impacted sensitive land uses to give notice of possible disturbances and impacts. The mailing shall also identify the disturbance coordinator's contact information. 	During all construction activities that occur during the initial construction phase, as well as during operation and maintenance and decommissioning that are being performed in proximity to vibration-sensitive receptors.	PG&E shall be responsible for the implementation of these measures. DTSC shall be responsible for ensuring compliance.		

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CUL-5	<p>Cumulative Impacts to the Topock TCP (New Measure).</p> <p>PG&E shall provide funding to the following Tribes (Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, and Hualapai Indian Tribe) that would facilitate actions to preserve the cultural and ecological integrity of the Topock TCP, and that would provide interpretation, and/or educational programs related to the Topock TCP. The funds shall be used for the purposes of ensuring the preservation, conservation and transmission of cultural values associated with the Topock TCP, including furthering Tribal knowledge and community awareness of the TCP's importance and meaning for each Tribe. The funds shall be used to implement interpretive facilities or programs, land preservation/conservation, educational programs (such as grant funding to further the cultural understanding, including research of the Topock area). The Project's Conditions of Approval will identify the amount of the one-time contribution to be made by PG&E, and the type of funding mechanism to be utilized as determined by DTSC. The funding mechanism shall provide for the management of individual, separate funds of equal amounts for each of the five Tribes, and shall administer the release of funds upon review and approval of proposals by Tribe(s). Proposals must meet the above-described purpose related to preservation/conservation, interpretation, and/or educational programs pertaining to the Topock TCP, and must meet pre-established minimum criteria. The funding mechanism shall also provide tracking and verification through documentation of the appropriate use of the funds. Within 6 months of Project approval, DTSC shall develop, in consultation with the Tribes, Tribal Funding Application Guidelines for distribution to the Tribes. The Tribal Funding Application Guidelines will identify the funding management organization that will manage the funds and will provide guidance on accessing the funds, including the identification of minimum criteria by which proposals will be evaluated. Within 30 days of notification by DTSC that the funding management organization has been established, PG&E shall provide documentation that the required funding contribution has been made. The funding organization shall report to DTSC upon the following three occasions: (1) receipt of a proposal by Tribe(s), (2) approval and release of funds, and (3) verification of implementation/use of funds. Funding shall be available for use within the duration of the active remedy, currently estimated to be approximately 30 years.</p>	Implementation of CUL-1 through CUL-4 prior to and during construction, operation and maintenance, and decommissioning, and CUL-5 prior to construction activities and over 30 years of Project operation.	PG&E shall be responsible for the implementation of these measures. DTSC shall be responsible for ensuring compliance.		
NOISE-3	<p>Cumulative Noise Increases from Remedial Activities (New Measure).</p> <p>Coordination between teams implementing soil remedial activities (including investigation, pilot testing, and remediation) and groundwater remediation shall occur as to avoid cumulative noise levels to exceed ambient noise levels by 5 dBA or greater, or to exceed applicable County standards at any sensitive receptor (as defined in Chapter 4.7 of this SEIR). If concurrent activities must occur near common sensitive receptors, real time noise measurements of activities shall be conducted by a qualified acoustical consultant (or contractor</p>	Prior to and during construction, operation and maintenance, and decommissioning	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.		

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	trained by an appropriate qualified acoustical consultant) at the nearest noise-sensitive land use with a sound level meter that meets the standards of the American National Standards Institute (ANSI Section S14 1979, Type 1 of Type 2). If exceedances are not observed, monitoring can be discontinued. If exceedances are experienced, temporary barriers shall be erected as close to the construction activities as feasible, breaking the line of sight between the source and receptor where noise levels exceed applicable standards. If noise cannot be effectively mitigated, one or more of the concurrent activities shall be modified (options include but are not limited to using lower-noise-producing equipment or manual methods, relocating activities further away from each other, or avoiding/rescheduling concurrent activity, etc.) so as to result in appropriate noise levels.				

SOURCES:

CH2M HILL. 2014. *Bird Impact Avoidance and Minimization Plan Topock Groundwater Remediation Project*. Prepared for Pacific Gas and Electric Company. April 2014;

International Society of Arboriculture (ISA 2011). 2011. *Pruning Mature Trees*. Champaign, IL;

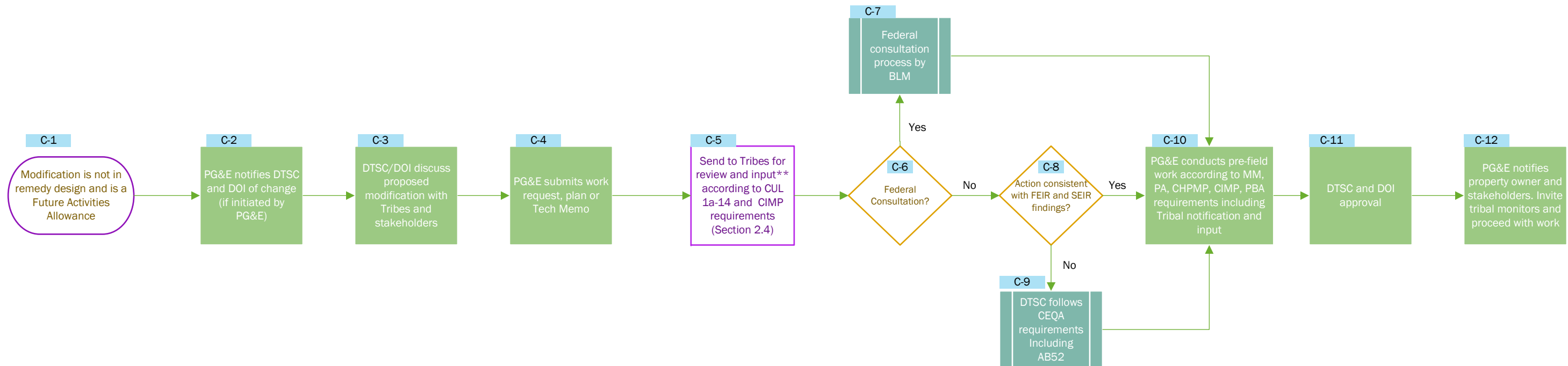
Society for Vertebrate Paleontology (SVP). 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*. Available:. Accessed February 20, 2014.

Exhibit 3 to the Statement of Decision and
Resolution of Approval

Communication Protocol for Future
Activity Allowance

Exhibit 3
Communication Protocol for Future Activity Allowance¹
During construction, operation, and maintenance

August 15, 2017



¹ Future Activity Allowance is an activity that is not considered in the remedy design but necessary to support the project objectives. Future Activity Allowance is a Material Deviation which is defined in the final groundwater remedy design as:

Material Deviation means a change or correct from a condition that would (1) render the approved design non-compliant with codes, regulations, and /or engineering standard of practices, (2) render planned well locations and/or constructions fail to meet the project objectives, (3) cause significant schedule delay, and/or (4) cause a significant increase in costs. (CH2M Hill, 2015)

** All Tribal input received in writing as part of communication for material deviations discussions, including Future Activity Allowance, will be kept as administrative record for project.

Acronyms:

- BLM – Bureau of Land Management
- CIMP – Cultural Impact Mitigation Program
- CHPMP - Cultural and Historic Property Management Plan
- DOI – United States Department of the Interior
- DTSC – Department of Toxic Substances Control
- FEIR – 2011 Final Environmental Impact Report
- MM – Mitigation Measures
- PA – Programmatic Agreement
- PBA – Programmatic Biological Assessment
- SEIR – Subsequent Environmental Impact Report